CORPORATION

1001 TAHOE BOULEVARD, INCLINE VILLAGE, NEVADA 89451-9309 (775) 833-6161 (800) 443-4079 FAX (775) 833-6151

August 4, 2003

U.S. Environmental Protection Agency
David J. Newton, RPM
New Hampshire and Rhode Island Superfund Section
Office of Site Remediation & Restoration
1 Congress Street, Suite 1100, Mail Code: HBO
Boston, MA 02114-2023

Re: Peterson/Puritan, Inc. Superfund Site, OU-2

Dear Mr. Newton:

In a Request for Information (the "Request"), the U.S. Environmental Protection Agency, Region I ("EPA"), requested Fortifiber Corporation ("Fortifiber") to provide certain information and documents in connection with EPA's investigation of releases or threatened releases at the Peterson/Puritan, Inc. Superfund Site, Operable Unit 2 (the "Site"). Fortifiber submits this response to EPA's information request (the "Request") in accordance with Section 104(e) of CERCLA, 42 U.S.C. § 9604(e), as amended, and Section 3007 of RCRA, 42 U.S.C. § 6927, and in accordance with the extensions of time provided by your office and EPA's consultant, including the most recent extension requested by Laurie Burt of Foley Hoag LLP from Paul Jenkins of TechLaw Inc.

Fortifiber's response to the Request is limited by the fact that Fortifiber did not commence operations in New England until 1979 when it acquired a facility at 55 Starkey Avenue in Attleboro, Massachusetts (the "Starkey Avenue facility"). As explained below, Fortifiber has not identified any information indicating that wastes generated at its Starkey Avenue facility were transported to the Site. However, Fortifiber notes that prior to 1979, the Starkey Avenue facility was operated by St Regis Paper Company which was subsequently acquired by International Paper Company. International Paper can be reached as follows:

Roger Schumer
International Paper
6400 Poplar Avenue
Memphis, TN 38197
Tel: 901/419-3957

Fortifiber does not have the operational records of St. Regis Paper Company. Fortifiber understands the Request to seek operational information only about the Starkey Avenue facility up until the Site closed in 1986.

RESPONSE TO SPECIFIC ITEMS OF THE REQUEST

1. General Information About Respondent

   a. Provide the full legal name and mailing address of the Respondent.

      Fortifiber Corporation
      1001 Tahoe Boulevard
      Incline Village, NV 89451

   b. For each person answering these questions on behalf of Respondent, provide:

      i. full name;
      ii. title;
      iii. business address; and
      iv. business telephone number and FAX machine number.

      Douglas Driver
      Fortifiber Corporation
      1001 Tahoe Boulevard
      Incline Village, NV 89451
      Phone 775/833-6161
      Fax: 775/833-6151

      This response is not made on the basis of personal knowledge unless otherwise indicated and was prepared by or with the assistance of agents, representatives, employees and officers of Fortifiber or others believed to have relevant information, and on the advice of counsel, which advice was relied upon herein. The answers set forth herein, subject to inadvertent or undiscovered errors or omissions, are based on and therefore necessarily limited by the records and information still in existence, currently recollected, thus far discovered in the course of the preparation of this response, and currently available to the undersigned.

   c. If Respondent wishes to designate an individual for all future correspondence concerning this Site, including any legal notices, please so indicate here by providing that individual's name, address, telephone number, and FAX number.

Robert S. Sanoff
Foley Hoag LLP
155 Seaport Boulevard
Boston, MA 02210
Phone: 617/832-1152
Fax: 617/832-7000

d. State every address in the New England States at which the Respondent conducted business during the period being investigated.

55 Starkey Avenue
Attleboro, MA 02703

e. State the dates during which Respondent conducted business at each such location.

Fortifiber has conducted business at the Starkey Avenue facility from 1979 through to the present

f. Describe the nature of Respondent's current business at each such location, including but not limited to a brief description of the major products or services Respondent manufactures or provides.

Fortifiber's current business at the Starkey Avenue facility is extrusion coating and laminating of paper. Major products are vapor barrier products for the building industry, roll wrap for newsprint, and release papers for industrial applications.

g. List the Standard Industrial Classification (SIC) code for the business at each location.

The SIC for the business at the Starkey Avenue facility is 2671.

h. Describe the nature of the Respondent's business at each location during the period being investigated.

See 1.f. above

i. For each location, identify all surveys, studies, or collections of data for which Respondent has submitted information to local, state, federal, or private entities about its waste disposal/recycling practices.

Fortifiber has not identified any such surveys, studies, or collections of data.

j. Provide a copy of the information submitted by Respondent for such survey or study.

N/A

k. Provide a copy of the resulting survey, study, or collection of data.

N/A

l. Provide the names of all Superfund sites throughout the country for which Respondent has received notification of its potential liability from EPA and the dates of such notification(s).

Fortifiber does not believe it has received notification from EPA with respect to potential liability at any Superfund Site.

m. Provide the names of all Superfund sites in Region I (New England) for which Respondent has received a request for information from EPA.

N/A

2. Respondent's Legal and Financial Status.

a. State the number of Respondent's current employees.

Fortifiber currently has 187 employees, of which 59 work at the Starkey Avenue facility.

b. State the annual average number of persons employed by Respondent for every five year period during the period being investigated.

Fortifiber had 70 employees at the Starkey Avenue facility from 1999-2003 and 80 employees from 1994-1998.

c. If the Respondent has ever done business under any other name;

i. list each such name; and
ii. list the dates during which such name was used by Respondent.

N/A

d. Provide the following financial information for each of the last five years:

i. total sales;
ii. net income;
iii. depreciation;
iv. total assets;
v. total liabilities; and
vi. net working capital (or net current assets).

See Attachment A (which is being submitted as Confidential Business information)

e. For Respondents who are individuals, provide for each of the last five years:

N/A

i. the gross annual income reported to the U.S. Internal Revenue Service; and
ii. the taxable annual income reported to the U.S. Internal Revenue Service.

See Attachment A

f. If Respondent is a corporation, provide:

i. the date of incorporation;

1939

ii. state of incorporation;

California

iii. agent for service of process;

CT Corporation
2 Oliver Street
Boston, MA 02109

iv. the names of current officers;

G. Stuart Yount, Carl Thoms, Douglas Driver, Louis Tall

v. the names of current directors;

G. Stuart Yount, Carl Thoms, Douglas Driver, Robert Thoms, Philip Alspach, James Rooney

vi. the names of current shareholders owning more than 5% of Respondent's stock;

The G. Stuart and Geraldine M. Yount Family Trust

vii. the names of all officers during the period being investigated;

Stanley G. Yount, Robert Thoms, G. Stuart Yount

viii. the names of all directors during the period being investigated; and

Stanley G. Yount, Robert Thoms, G. Stuart Yount, John Stanko, Warren Driver, Philip Alspach

ix. the names of all shareholders owning more than 5% of the Respondent's stock at any time during the period being investigated.

Stanley G. Yount, Stuart Yount

g. If Respondent is a partnership, provide:

N/A

i. the names and addresses of all current partners;
ii. the names of all partners in the period being investigated; and
iii. the type of partnership (e.g. general, limited).

h. If Respondent is a trust, provide:

N/A

i. the names and addresses of all current trustees;
ii. the names and addresses of all current beneficiaries;
iii. the names of all trustees during the period being investigated;
iv. the names of all beneficiaries during the period being investigated; and

v. a copy of the document which sets out the purpose of the trust and the duties and powers of the trustees (e.g. the declaration of trust or trust agreement).

i. If Respondent is, or was at any time during the period being investigated, a subsidiary of, otherwise owned or controlled by, or otherwise affiliated with another corporation or entity, then describe the nature of each such corporate relationship, including but not limited to:

N/A

i. a general statement of the nature of the relationship;
ii. the dates such relationship existed;
iii. the percentage of ownership of Respondent that is held by such other entity; and
iv. for each such affiliated entity provide the names and complete addresses of its parent, subsidiary, and otherwise affiliated entities.

j. Identify all of Respondent's predecessors-in-interest and provide a description of the relationship between Respondent and each of those predecessors-in-interest.

N/A

k. If Respondent no longer exists as a legal entity because of dissolution provide:

N/A

i. a brief description of the nature and reason for dissolution;
ii. the date of dissolution;
iii. documents memorializing or indicating the dissolution of the entity, and
iv. a statement of how and to whom the entity's assets were distributed.

l. If Respondent no longer exists as the same legal entity it was during the period being investigated because of transactions involving asset purchases or mergers, provide:

N/A

i. the titles and dates of the documents that embody the terms of such transactions (e.g., purchase agreements, merger and, dissolution agreements, etc.);
ii. the identities of the seller, buyer, and any other parties to such transactions; and
iii. a brief statement describing the nature of the asset purchases or mergers.

m. If Respondent is a governmental entity, provide:

N/A

i. the complete name of the entity and other governmental entities of which it is a part, and
ii. all notice and service of process requirements for Respondent.

n. If Respondent has filed for bankruptcy, provide:

N/A

i. the U.S. Bankruptcy Court in which the petition was filed;
ii. the docket numbers of such petition;
iii. the date the bankruptcy petition was filed;
iv. whether the petition is under Chapter 7 (liquidation), Chapter 11 (reorganization), or other provision;
v. a brief description of the current status of the petition.

3. Information About Others

a. If you have information concerning the operation of the Site or the source, content or quantity of materials placed/disposed at the Site which is not included in the information you have already provided, provide all such information.

N/A

b. If not already included in your response, if you have reason to believe that there may be persons, including persons currently or formerly employed by Respondent, who are able to provide a more detailed or complete response to any of these questions or who may be able to provide additional responsive documents, identify such persons and the additional information or documents that they may have.

N/A

c. If not already provided, identify all persons, including Respondent's current and former employees, who have knowledge or information about the generation, use, purchase, treatment, storage, disposal, placement or other handling of materials at, or transportation of materials to, the Site.

N/A

4. Compliance with This Request

a. Describe all sources reviewed or consulted in responding to this request, including but not limited to:

i. the names of all individuals consulted;
ii. the current job title and job description of each individual consulted;
iii. the job title and job description during the period being investigated of each individual consulted;
iv. whether each individual consulted is a current or past employee of Respondent;
v. the names of all divisions or offices of Respondent for which records were reviewed;
vi. the nature of all documents reviewed; and
vii. the locations where those documents reviewed were kept prior to review; and
viii. the location where those documents reviewed are currently kept.

In preparing this response, Fortifiber interviewed several managers from the Starkey Avenue facility, as well as several current maintenance employees. The managers who were interviewed included:

Steve Fisk, Plant Superintendent
Richard Mellen, Manager of Manufacturing Services
Everett Hyland, Supervisor

The current maintenance employees did not have knowledge of practices and operations prior to 1986. In addition, Fortifiber also contacted two former maintenance managers, Ray Galvin and Rawl Rutter.

In preparing this response, Fortifiber searched for records relating to its waste handling and waste disposal practices at the Starkey Avenue facility prior to 1986, but was unable to locate such records. Fortifiber did review its current material safety data sheets and environmental files, including biannual NPDES permit reporting and Hazardous Waste Manifests.

5. Respondent's Operations:

a. Provide the complete addresses of Respondent's plants and other buildings or structures where Respondent carried out its operations, excluding those locations where only clerical/office work was performed in Rhode Island and/or Massachusetts. Unless otherwise indicated, all following questions refer to these operations.[2]

See 1.d. above.

[2] If the Respondent has more than three separate places of business in this area, please contact the EPA representative listed in the text of the cover letter to determine the appropriate scope of your response.

b. Provide a brief description of the nature of Respondent's operations at each location including:

i. the date such operations commenced and concluded; and
ii. the types of work performed at each location, including but not limited to the industrial, chemical, or institutional processes undertaken at each location.

See 1.f. above; see 5.i. below and Information Request Waste Survey.

c. If the nature or size of Respondent's operations changed over time, describe those changes and the dates they occurred.

N/A

d. List the products Respondent manufactured, recycled, recovered, treated, or otherwise processed in these operations.

See 5.b above. The key products manufactured at the Starkey Avenue facility include polyethylene-coated paper and linerboard, polyethylene-laminated linerboard.

e. In general terms, list the types of raw materials used in Respondent's operations.

In the most general terms, the key raw materials used at the Starkey Avenue facility include: Kraft linerboard paper, clay-coated paper, polyethylene, polypropylene, proxmelt, adhesive, plastic color concentrates, water-based flexographic inks, limestone, chlorinated paraffin, fiberglass reinforcement filament, metalized foil, and polyester film polyester fabric.

f. Provide copies of Material Safety Data Sheets ("MSDS") for materials used in the Respondent's operations.

See Attachment B.

g. Describe the cleaning and maintenance of the equipment and machinery involved in these operations, including but not limited to:

i. the types of materials used to clean/maintain this equipment/machinery; and
ii. the monthly or annual quantity of each such material used.

Type of Cleaning Material	Approximate Annual Quantity
Mechanical wiping with rags	6 drums (55 gallon)
Naptha solvent for parts washing	80 gallons
Waste Toluene	55 gallons
Acetone/Xylene	55 gallons
n-propyl acetate	55 gallons
Heat transfer - waste oil	440 gallons

h. Describe the methods used to clean up spills of liquid or solid materials during Respondent's operation, including but not limited to:

i. the types of materials spilled in Respondent's operations;
ii. the materials used to clean up those spills;
iii. the methods used to clean up those spills; and
iv. disposal of any materials used to clean up those spills.

Liquid or solid spills were contained and cleaned up using an absorbent material such as Speedy-Dry or rags. The absorbent material and spilled material was then stored in 55 gallon drums, labeled, and then disposed of via Clean Harbors of Braintree, MA.

i. Provide a schematic diagram or flow chart that fully describes and/or illustrates the Respondent's operations.

See Attachment C.

6. Respondent's Wastes and Waste Streams (including By-Products):

a. Complete the enclosed "Waste Survey" (Enclosure C), checking each substance present in Respondent's wastes or by-products and providing all requested information for each such substance that is checked.

See Attachment D.

b. For each type of waste (including by-products) from Respondent's operations, including but not limited to all liquids, sludges, and solids, provide the following information:

i. its physical state;
ii. its nature and chemical composition;
iii. its color;
iv. its odor;
v. the approximate monthly and annual volumes of each type of waste (using such measurements as gallons, cubic yards, pounds, etc.); and
vi. the dates (beginning & ending) during which each type of waste was produced by Respondent's operations.

See Attachment D.

c. Provide a schematic diagram that indicates which part of Respondent's operations generated each type of waste, including but not limited to wastes generated by cleaning and maintenance of equipment and machinery and wastes resulting from spills of liquid materials.

See Attachment C.

d. Identify (see Definitions) the person(s) responsible for collecting and managing each type of waste.

Steve Fisk and Richard Mellen and other current and former employees at the maintenance department at the Starkey Avenue facility were responsible for collecting and managing each type of waste.

e. Describe how each type of waste was collected and stored at Respondent's operation prior to disposal/recycling/sale/transport, including:

i. the type of container in which each type of waste was placed/stored; and
ii. where each type of waste was collected/stored.

All waste materials were stored in 55 gallon containers with the exception of paper and polyethylene-coated scrap material which was handled as follows: recycled scrap was stored and shipped in wire tied bales after being stored near the recycling shredder until shipped; some polyethylene--coated scrap rolls (including those with fiberglass reinforcement) were stored in a trailer until shipped for incineration; and trimmings and non-flammable adhesive coated rolls were stored in a dumpster until shipment.

7. Respondent's Disposal/Treatment/Storage/Recycling/Sale of Waste (including By-Products):

a. Identify (see Definitions) all individuals who currently have and those who have had responsibility for the disposal, treatment, storage, recycling, or sale of Respondent's wastes.

See 6.d. above

b. Identify (see Definitions) all individuals who currently have and those who have had knowledge of the disposal/treatment/storage/recycling/sale of Respondent's wastes.

See 6.d. above

c. Identify (see Definitions) all individuals who currently have and those who have had responsibility for Respondent's environmental matters.

See 6.d. above

d. For the previous three responses, also provide each individual's:

i. job title;
ii. duties;
iii. dates performing those duties;
iv. supervisors for those duties;
v. current position or, if such individual is no longer employed by Respondent, the date of the individuals resignation; and
vi. the nature of the information possessed by such individuals concerning Respondent's waste management.

See 6.d. above

e. Describe the containers used to take each type of waste from Respondent's operation, including but not limited to:

i. the type of container (e.g., 55 gal. Drum, dumpster, etc.);
ii. the colors of the containers;
iii. any distinctive stripes or other markings on those containers;
iv. any labels or writing on those containers (including the content of those labels);
v. whether those containers were new or used; and
vi. if those containers were used, a description of the prior use of the containers.

Dumpsters at the Starkey Avenue facility containing non-hazardous solid waste were hauled by Goddit & Boyer which was subsequently taken over by Waste Management. Hazardous, industrial and/or spill waste at the Starkey Avenue facility was segregated from solid waste and stored in 55 gallon drums and hauled by Clean Harbors beginning with Fortifiber's ownership in 1979.

f. For each type of waste describe Respondent's contracts, agreements, or other arrangements for its disposal, treatment, or recycling.

Fortifiber has not located contracts relating to waste handling and disposal for any portion of the period 1979-1986.

g. Provide copies of such contracts and other documents reflecting such agreements or arrangements.

N/A

h. State where Respondent sent each type of its waste for disposal, treatment, or recycling.

Fortifiber believes that dumpster waste from the Starkey Avenue facility from 1979 to 1986 was hauled to the Attleboro landfill until it was closed and then to the Plainville landfill. Hazardous wastes hauled by Clean Harbors from the Starkey Avenue facility from 1979 to 1986 were reportedly transported to Clean Harbors' facility in Braintree, MA.

i. Identify (see Definitions) all entities and individuals who picked up waste from Respondent or who otherwise transported the waste away from Respondent's operations (these companies and individuals shall be called "Waste Carriers" for purposes of this Information Request).

See 7.e. above.

j. If Respondent transported any of its wastes away from its operations, please so indicate and answer all questions related to "Waste Carriers" with reference to Respondent's actions.

N/A

k. For each type of waste specify which Waste Carrier picked it up.

See 7.e. above.

l. For each type of waste, state how frequently each waste Carrier picked up such waste.

Goddit & Boyer and Waste Management hauled dumpster waste from the Starkey Avenue facility from 1979 to 1986 approximately on a weekly basis. Clean Harbors picked up 55 gallon drums from the Starkey Avenue facility from 1979 to 1986 approximately four to six times per year.

m. For each type of waste state the volume picked up by each Waste Carrier (per week, month, or year).

See 5.g. and 7.l. above.

n. For each type of waste state the dates (beginning & ending) such waste was picked up by each Waste Carrier.

From 1979-1986, Goddit & Boyer and subsequently Waste Management picked up the dumpster solid waste; Clean Harbors picked up 55 gallon drums of hazardous, industrial and/or spill waste.

o. Provide copies of all documents containing information responsive to the previous seven questions.

Fortifiber has not located any records from the period 1979 - 1986 relating to waste shipments from the Starkey Avenue facility.

p. Describe the vehicles used by each Waste Carrier to haul away each type of waste including but not limited to:

i. the type of vehicle (e.g., flatbed truck, tanker truck, containerized dumpster truck, etc.);
ii. names or markings on the vehicles; and
iii. the color of such vehicles

Not known

q. Identify (see Definitions) all of each Waste Carrier's employees who collected Respondent's wastes.

Not known

r. Indicate the ultimate disposal/recycling/treatment location for each type of waste.

See 7.h. above.

s. Provide all documents indicating the ultimate disposal/recycling/treatment location for each type of waste.

See 7.o. above.

t. Describe how Respondent managed pickups of each waste, including but not limited to:

i. the method for inventorying each type of waste;
ii. the method for requesting each type of waste to be picked up;
iii. the identity of (see Definitions) the waste carrier employee/agent contacted for pickup of each type of waste;
iv. the amount paid or the rate paid for the pickup of each type of waste;
v. the identity of (see Definitions) Respondent's employee who paid the bills; and
vi. the identity of (see Definitions) the individual (name or title) and company to whom Respondent sent the payment for pickup of each type of waste.

Not known

u. Identify (see Definitions) the individual or organization (i.e., the Respondent, the Waste Carrier, or, if neither, identify such other person) who selected the location where each of the Respondent's wastes were taken.

Not known

v. State the basis for and provide any documents supporting the answer to the previous question.

N/A

w. Describe all wastes disposed by Respondent into Respondent's drains including but not limited to:

i. the nature and chemical composition of each type of waste;
ii. the dates on which those wastes were disposed;
iii. the approximate quantity of those wastes disposed by month and year;
iv. the location to which these wastes drained (e.g., on-site septic system, on-site storage tank, pretreatment plant, Publicly Owned Treatment Works ("POTW"), etc.); and
v. whether and what pretreatment was provided.

Fortifiber believes that sanitary waste from the Starkey Avenue facility was discharged to the City of Attleboro POTW and that non-contact cooling water was discharged into the storm water drainage system on site.

x. Identify any sewage authority or treatment works to which Respondent's waste was sent.

See 7.w. above.

y. For all settling tank, septic system, or pretreatment system sludges or other treatment wastes resulting from Respondent's operations, complete the enclosed Waste Survey (Enclosure C) and respond to all previous questions of this Information Request with reference to such wastes.

N/A

z. If not already provided, specify the dates and circumstances when Respondent's waste was taken to the Site, and identify the companies or individuals who brought Respondent's waste to the Site. Provide all documents which support or memorialize your response.

Fortifiber has not identified any information indicated that wastes from its Starkey Avenue facility were shipped to the Site.

8. Respondent's Environmental Reporting:

a. Provide all Resource Conservation and Recovery Act ("RCRA") Identification Numbers issued to Respondent by EPA or a state for Respondent's operations.

EPA Id # MAD093211530

b. Identify (see Definitions) all federal offices to which Respondent has sent or filed hazardous substance or hazardous waste information.

Fortifiber does not believe that it has sent or filed hazardous substance or hazardous substance waste information to a federal office, although it is not sure to which particular form of document the Request adverts. Further responding, Fortifiber refers to its response to subsequent items of this Request with respect to Fortifiber's NPDES permit.

c. State the years during which such information was sent/filed.

N/A

d. Identify (see Definitions) all state offices to which Respondent has sent or filed hazardous substance or hazardous waste information.

Massachusetts DEP
Division of Hazardous Waste
One Winter Street
Boston, MA 02108

e. State the years during which such information was sent/filed.

Estimated to begin as early as 1980 (but no records found confirming same)

f. List all federal and state environmental laws and regulations under which Respondent has reported to federal or state governments, including but not limited to: Toxic Substances Control Act, 15 U.S.C. § § 1101 et seq. ("EPCRA"); and the Clean Water Act (the Water Pollution Prevention and Control Act), 33 U.S.C. § § 1251 et seq.

Clean Water Act -- National Pollutant Discharge Elimination System (NPDES); RCRA -- Hazardous Waste Manifests

g. Identify (see Definitions) the federal and state offices to which such information was sent.

US EPA -- Region I
John F. Kennedy Federal Building
Boston, MA 02203

Massachusetts DEP
Division of Hazardous Waste
One Winter Street
Boston, MA 02108

9. Site Operations:

a. Describe what was done to each type of material after it was taken to the Site.

b. Describe where each type of material brought to the Site was disposed or otherwise placed.

c. If particular types of materials were placed or disposed in separate or specific areas of the Site, indicate:

i. the types of materials so placed or disposed;
ii. where on the Site those materials were placed or disposed; and

iii. how those materials were placed or disposed (e.g., Site operator crushed full pails with bulldozer or Respondent emptied full 55 gallon metal barrels into a pit and Site operator then crushed and buried the barrels.)

d. If particular materials were placed or disposed in separate or specific areas of the Site, indicate:

i. the identity of (see Definitions) each such location to which this material originated;
ii. the nature and chemical composition of each type of material so placed or disposed;
iii. the quantity of each material so placed or disposed; and
iv. where on the Site each such customer's material was so placed or disposed.

e. If drums were placed or disposed at the Site, indicate:

i. where they were placed or disposed; and
ii. their condition when placed or disposed (e.g., if they were left open or closed, intact, or punctured, whole or crushed).

f. If liquids were placed or disposed at the Site, indicate whether and how liquids were:

i. mixed at the Site;
ii. placed or disposed in a separate area; and
iii. placed or disposed in their containers or removed from their containers.

g. Describe all procedures undertaken by Respondent and the Site operator upon Respondent's arrival/entry on to the Site, including but not limited to:

i. The completion of any documentation of disposal/placement at the Site;
ii. Any exchange of cash or checks; and
iii. Any review of permits or other authorities to dispose/place materials at the Site.

h. Describe Respondent's procedures for paying for the disposal/placement of materials at the Site, including but not limited to:

i. method of payment (e.g., cash, check, money order);
ii. the frequency of which those payments were made;
iii. to whom those payments were made;
iv. the total amount of those payments and the rates paid;
v. where those payments were made (e.g., at the Site, sent in mail, etc.); and

vi. providing the identity of the Respondent's employee/agent in charge of accounting for and making such payments.

i. Identify (see Definitions) other individuals and entities that Respondent has reason to believe may have taken or sent materials to the Site.

j. Of those individuals and entities identified in the response to the preceding question, specify which individuals or entities Respondent observed at the Site, and indicate when those observations were made.

k. Provide all information known by Respondent regarding the customers of the entities or individuals identified in the preceding two questions (i.e., the companies or individuals whose material was taken to the Site).

Fortifiber has not located any information indicating that wastes from its Starkey Avenue facility were shipped to the Site; hence, the subparts of this item of the Request do not apply.

10. Storage, Consolidation or Transfer:

a. If Respondent did not bring all materials directly to the Site (i.e., materials were stored, treated, consolidated, transferred or held at other locations prior to final disposal/placement at the Site), provide:

i. the name and address of the other locations;
ii. a description of the nature of operations at such other locations;
iii. the identity of (see Definitions) the individuals and entities who operated such other locations;
iv. a description of the kinds of materials taken to those locations;
v. a description of the quantities of materials taken to those locations;
vi. a description of the process(es) the materials underwent at each such location (e.g., storage, consolidation, treatment, etc.); and
vii. a description of how long wastes remained at each such location before being taken to the Site.

See 9 and 7.h. above

11. With specific reference to Enclosure C of this letter, please provide the following:

a. Any and all information concerning the Waste Types identified on Enclosure C including, but not limited to, total volume(s) disposed, the duration of time during which each Waste Type was disposed at the Site, physical state(s)/characteristic(s), method(s) of containing, shipping and disposing, leachability, corrosivity, and toxicity of each Waste Type so identified.

See 6 and 7 above.

b. Copies of all documents the Respondent has in its possession and which the Respondent referred to in response to question 11, concerning Enclosure C.

See 7.o. above

c. Identify (see Definitions) any/all individuals and entities that Respondent has reason to believe may have arranged for, shipped, taken or sent these specific Waste Types to the Site for disposal.

See 9 above.

d. For each waste type or source category as indicated in Enclosure C, identify the specific manufacturing or waste stream from which these materials were derived.

See 6 above.

e. Provide copies of all tests, analyses, and analytical results, shipping invoices, manifests or other tracking report(s) concerning each material Respondent generated for disposal at the Site as indicated by Enclosure C.

Fortifiber has not identified any such tests.

f. If you do not have documents responsive to the previous question but believe others do (e.g., transporters), identify who might have such documents and the basis for such a belief.

Not known

g. List all facility(s) and or location(s) for which these Waste Types were generated and so disposed of at the Site. (Note: If such facility(s) are no longer under your ownership, operation, or control, then identify the current owner/operator of each such facility(s).

See 9 above.

DECLARATION

I declare under penalty of perjury that I am authorized to respond on behalf of Fortifiber Corporation, and that the foregoing is complete, true, and correct.

Executed on August 4, 2003

Douglas Driver
Vice President

Attachments

A. Financial Information (Confidential Business Information)

B. Material Safety Data Sheets

C. Schematic Drawing of Operations at Sharkey Avenue facility

D. Information Request Waste Survey

PETERSON PURITAN
OPERATING UNIT 2
SITE FILE

CONFIDENTIAL INFORMATION REDACTED.

[SEE CONFIDENTIAL FILE(S) FOR ADDITIONAL INFORMATION]

5 i. Schematic diagram of Fortifiber Corporation's operations in Attleboro, MA.

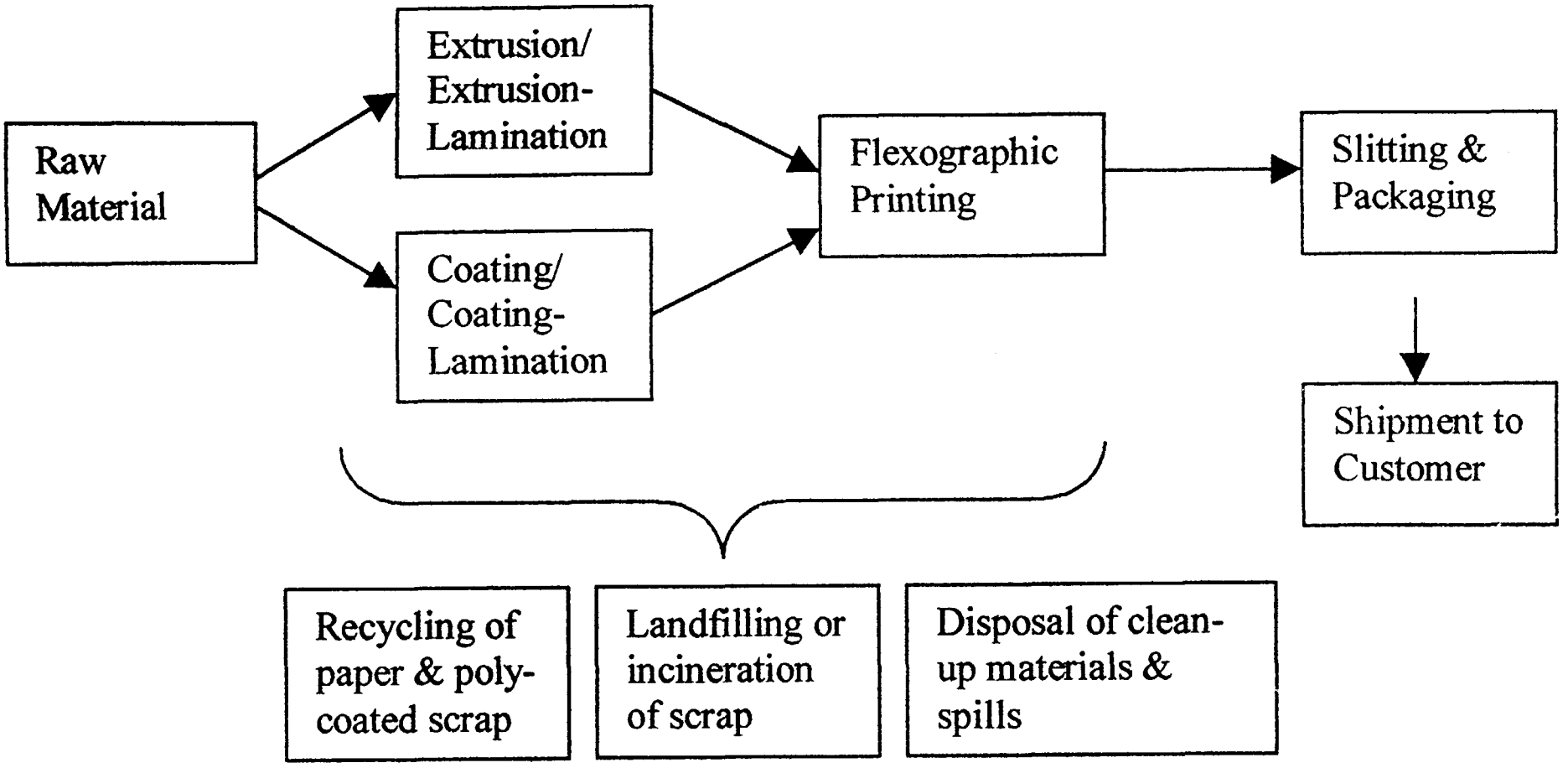

EXHIBIT "C"

EXHIBIT D

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION I

Information Request Waste Survey

Name of Respondent: Fortifiber Corporation Responent's Location: Attleboro, MA Date: 9/22/00

	Substance	**Physical State when Disposed/Type of Container (e.g. Liquid/5 gal pails, Sludge/55 gal drums, Solid/directly in dumpster**	**Trade Name /Chemical Composition (e.g. Nitric acid/HNO_3, Tetrahydrofuran/C_4H_8O.**	**Volume (per month)**	**Disposal Method and Location (year) (e.g. dumpster ('55-68), [Name] Landfill ('69-81), [Name] Solvent Reclaimer ('82-'91).**
	Acids				
	Adhesives	Solid/55 gal. Drums	Pyrokure adhesive/limestone, paroil, antimony oxide	2000 pounds	Clean Harbors (79-86)
	Asbestos				
	Adsorbents (from spills, leaks, etc.	Solid/55 gal. Drums	Waste oil/petroleum	300 lbs.	Clean Harbors (79-86)
	Automotive relative Wastes				
	Antifreeze				
	Batteries				
	Brake Fluids				
	Degreasers				
	Lubricants				

	Substance	**Physical State when Disposed/Type of Container (e.g. Liquid/5 gal pails, Sludge/55 gal drums, Solid/directly in dumpster**	**Trade Name /Chemical Composition (e.g. Nitric acid/HNO_3, Tetrahydrofuran/C_4H_8O.**	**Volume (per month)**	**Disposal Method and Location (year) (e.g. dumpster ('55-68), [Name] Landfill ('69-81), [Name] Solvent Reclaimer ('82-'91).**
	Oils				
	Oil Filters				
	Transmission Fluids				
	Other:				
	Batteries				
	Bleaches				
	Caustics/Alkalis				
	Chemicals				
	Cleaning Compounds or fluids				
	Coolants				
	Degreasers	Liquid/30 gal. Drums	Petroleum Naphtha	7 gallons	Safety Kleen (79-86)
	Disinfectants				
	Distillation Byproducts (Still Bottoms)				
	Dyes				

	Substance	**Physical State when Disposed/Type of Container (e.g. Liquid/5 gal pails, Sludge/55 gal drums, Solid/directly in dumpster**	**Trade Name /Chemical Composition (e.g. Nitric acid/HNO_3, Tetrahydrofuran/C_4H_8O.**	**Volume (per month)**	**Disposal Method and Location (year) (e.g. dumpster ('55-68), [Name] Landfill ('69-81), [Name] Solvent Reclaimer ('82-'91).**
	Etching Solutions				
	Filters				
	Flammable, Reactive, or Explosive Materials	Liquid/55 gal. Drums	Ink wash/n-propyl acetate	28 gallons	Clean Harbors (79-86)
	Fungicides				
	Herbicides				
	Insecticides				
	Insulating/Fire Proofing Materials				
	Laboratory Wastes	Liquid/55 gal. Drums	Toulene Acetone	8 gallons	Clean Harbors (76-86)
	Lubricants				
	Metals:				
	Grindings	Solid/Direct to Dumpster	Steel & Aluminum	5 pounds	Dumpster (79-86)
	Powders	Solid/Direct to Dumpster	Steel & Aluminum	5 pounds	Dumpster (79-86)
	Shavings	Solid/Direct to Dumpster	Steel & Aluminum	5 pounds	Dumpster (79-86)
	Sludges				

	Substance	**Physical State when Disposed/Type of Container (e.g. Liquid/5 gal pails, Sludge/55 gal drums, Solid/directly in dumpster**	**Trade Name /Chemical Composition (e.g. Nitric acid/HNO_3, Tetrahydrofuran/C_4H_8O.**	**Volume (per month)**	**Disposal Method and Location (year) (e.g. dumpster ('55-68), [Name] Landfill ('69-81), [Name] Solvent Reclaimer ('82-'91).**
	Solutions				
	Other:				
	Paint and Coating Wastes:				
	Paint				
	Pigments				
	Stripper				
	Stains				
	Thinner				
	Turpentine				
	Varnish				
	Other:				
	PCBs (polychlorinated biphenyls)				
	Pesticides				
	Photocopying Wastes	Solid/55 gallon bin	Paper	9 bins	Dumpster (79-86)

	Substance	**Physical State when Disposed/Type of Container (e.g. Liquid/5 gal pails, Sludge/55 gal drums, Solid/directly in dumpster**	**Trade Name /Chemical Composition (e.g. Nitric acid/HNO_3, Tetrahydrofuran/C_4H_8O.**	**Volume (per month)**	**Disposal Method and Location (year) (e.g. dumpster ('55-68), [Name] Landfill ('69-81), [Name] Solvent Reclaimer ('82-'91).**
	Toners				
	Other:				
	Photography Wastes:				
	Developers				
	Fixers				
	Other:				
	Plating Solutions				
	Pretreatment Sludges/Solutions (sewage)				
	Printing Wastes:				
	Inks				
	Dyes				
	Other: Pigments	Solid/55 gal. Drums	Water flexo paper ink/ink pigments	1,000 pounds	Clean Harbors (79-86)
	Rags, Used (Indicate prior use)	Solid/Dumpster	(Clean Rags)	100 pounds	Dumpster (79-86)
	Rodenticides				

	Substance	**Physical State when Disposed/Type of Container (e.g. Liquid/5 gal pails, Sludge/55 gal drums, Solid/directly in dumpster**	**Trade Name /Chemical Composition (e.g. Nitric acid/HNO_3, Tetrahydrofuran/C_4H_8O.**	**Volume (per month)**	**Disposal Method and Location (year) (e.g. dumpster ('55-68), [Name] Landfill ('69-81), [Name] Solvent Reclaimer ('82-'91).**
	Septic System Wastes				
	Sludges				
	Soldering Solutions				
	Solutions of Polymers, resins, plastics				
	Solvent Extracts				
	Solvents				
	Waste Oils	Liquid/55 gal. Drums	Waste oil/petroleum	55 gallons	Clean Harbors (79-86)
	Wood Preservatives				
	Other:				
	Polyethylene	Solid/Dumpster	Polyethylene	40,000 pounds	Dumpster (79-86)
	Polypropylene	Solid/Dumpster	Polypropylene	8,000 pounds	Dumpster (79-86)
	Uncoated Paper	Solid/Dumpster	Uncoated paper	150 tons	Dumpster (79-86)
	Proxmelt	Solid/Dumpster	Proxmelt/paraffin waxes	500 pounds	Dumpster (79-86)

PIERCE & STEVENS 716-856-4910
P.O. Box 1092
Buffalo, NY 14240
OUT EMERGENCY CHEMTEL (800)255-3924 (24hrs)
INFORMATION PHONE NO. 800-888-4910 (M-F 8am-5pm ET)

H.M.I.S.
HEALTH 0
FLAMMABILITY 0
REACTIVITY 0
These ratings should be used only as part of fully implemented H.M.I.S. program.

MATERIAL SAFETY DATA SHEET

SECTION 1 - PRODUCT INFORMATION

DATE OF PREPARATION 1/30/99

TRADE NAME PROXMELT

MANUFACTURER CODE I.D. E4050

SECTION 2 - HAZARDOUS INGREDIENTS/COMPOSITION INFORMATION

INGREDIENT	% BY WGT	CAS NO.	ALLOWABLE EXPOSURE LEVEL	SARA 313	VP mm Hg @ 20 DEG.C
			PPM MG/CU.M.	SKIN	
PARAFFIN WAXES		64742-43-4 TLV-TWA	2		

SKIN = SKIN ABSORPTION MUST BE CONSIDERED AS A ROUTE OF EXPOSURE
C-CEILING= ALLOW. EXPOSURE LEVEL SHOULD NOT BE EXCEEDED FOR ANY TIME PERIOD
MFR = MANUFACTURER RECOMMENDED EXPOSURE LIMIT
STEL = SHORT TERM EXPOSURE LIMIT
X-SARA 313 = CHEMICAL IS SUBJECT TO REPORTING REQUIREMENTS OF SECTION 313 OF TITLE III OF S.A.R.A. 40 CFR PART 372

SECTION 3 - HAZARDS IDENTIFICATION

EFFECTS OF SHORT TERM OVEREXPOSURE

SWALLOWING
May cause gastrointestinal irritation.

INHALATION
Unknown

EYE
May cause eye irritation.

SKIN
Contact with heated material may cause skin irritation or burns.

EFFECTS OF REPEATED OVEREXPOSURE
None currently known

SIGNIFICANT LABORATORY DATA WITH POSSIBLE RELEVANCE TO HUMAN HEALTH.
None currently known

SECTION 4 - FIRST-AID MEASURES

SWALLOWING
If swallowed call Poison Control Center, Hospital Emergency Room, or Physician immediately.

INHALATION
Remove to fresh air immediately. If breathing has stopped, give artificial respiration. Keep warm and quiet. Get medical attention immediately.

EYE
Flush eyes with water until relieved. Consult a physician.

SKIN
Remove contaminated clothing. Wash affected area with soap and water. Obtain medical attention if irritation persists.

NOTES TO PHYSICIAN
Any treatment that might be required for overexposure should be directed at the control of symptoms and the clinical conditions.

SECTION 5 - FIRE-FIGHTING MEASURES

NFPA FLAMMABILITY CLASSIFICATION Not Applicable

FLASHPOINT Not applicable

EXTINGUISHING MEDIA
Use NFPA Class B Fire extinguishers (carbon dioxide, all purpose dry chemical or alcohol foam) designed to extinguish flammable liquid fires. Polymer foam is preferred for large fires.

UNUSUAL FIRE AND EXPLOSION HAZARDS
None known.

SPECIAL FIRE FIGHTING PROCEDURES
None known

SECTION 6 - ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED
Sweep up and dispose with industrial trash.

WASTE DISPOSAL
Dispose in accordance with federal, state and local regulations.

RCRA CLASSIFICATION
As produced, this product is not a waste. If discarded as is,

SECTION 6 - ACCIDENTAL RELEASE MEASURES (Continued)

RCRA CLASSIFICATION
It is not classified a hazardous waste under RCRA.
ENVIRONMENTAL HAZARDS
None known

SECTION 7 - HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE
None likely to be needed.
OTHER PRECAUTIONS
None likely to be needed.

SECTION 8 - EXPOSURE CONTROLS

RESPIRATORY PROTECTION
If the TLV's listed in Section II are exceeded use a properly fitted NIOSH/MSHA approved respirator with an appropriate protection factor. Refer to OSHA 29 CFR 1910.134 "Respiratory Protection".
VENTILATION
Natural ventilation should be adequate under normal conditions.
HAND PROTECTION
Wear appropriate impermeable gloves.
EYE PROTECTION
Wear safety spectacles.
OTHER PROTECTIVE EQUIPMENT
Eyewash facility, safety shower.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

BOILING RANGE 162 DEG.F. (72 DEG.C.)

VAPOR DENSITY Not applicable. **% VOLATILE BY VOLUME** 0

EVAPORATION RATE .00 lb/gal less water & NPRS* 0 CALCULATED
Not applicable.

WEIGHT LB./GAL. 7.8 **VOC** .00 lb/gal solids 0 g/l solids CALCULATED
SPECIFIC GRAVITY 0.9

All Physical data determined at 68 DEG. F. (20 DEG. C.) 760 mm Hg
* Negligibly Photochemically Reactive Materials

SECTION 10 - STABILITY AND REACTIVITY

STABILITY
Normally stable.
CONDITIONS TO AVOID
None known
INCOMPATABILITY (MATERIALS TO AVOID)
None known
HAZARDOUS DECOMPOSITION PRODUCTS
Burning, including when heated by welding or cutting, will produce smoke, carbon monoxide and carbon dioxide.In addition,aldehydes and various hydrocarbons,may be generated.
HAZARDOUS POLYMERIZATION
Will not occur
CONDITIONS TO AVOID
None known

SECTION 11 - TOXICOLOGICAL INFORMATION

No information available.

SECTION 12 - ECOLOGICAL INFORMATION

No information available.

SECTION 13 - DISPOSAL CONSIDERATIONS

See Section 6.

SECTION 14 - TRANSPORT INFORMATION

TRANSPORTATION

MODE	PROPER SHIPPING NAME	CLASS	I.D.#	PKG GRP
IATA (AIR)	ADHESIVES,NOT RESTRICTED			
DOT (HM-181) (DOMESTIC SURFACE)	ADHESIVES, NOT RESTRICTED			
IMDG CODE (OCEAN)	ADHESIVES, NOT RESTRICTED			

SECTION 15 - REGULATORY INFORMATION

SECTION 15 - REGULATORY INFORMATION (Continued)

INGREDIENT	CAS NO.	DETAIL INVENTORY LIST INFORMATION
*FIN WAXES	64742-43-4	DSL

DETAIL INVENTORY LIST DESCRIPTION

DSL/Canadian Domestic Substance List

SECTION 16 - OTHER INFORMATION

THE INFORMATION CONTAINED HEREIN IS BASED ON DATA CONSIDERED TO BE ACCURATE. WHILE THE INFORMATION IS BELIEVED TO BE RELIABLE, NO WARRANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THIS DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF. SINCE THE USE OF THIS INFORMATION AND THE CONDITIONS AND USE OF THIS PRODUCT ARE CONTROLLED BY THE USER, IT IS THE USER'S OBLIGATION TO DETERMINE THE CONDITIONS OF SAFE USE OF THE PRODUCT. The Corporate Safety and Environmental Affairs Department is responsible for the preparation of this Material Safety Data Sheet.

*ORTIFIBER CORP
35 STARKEY AVE
ATTLEBORO MA
02703-1813

MATERIAL SAFETY DATA SHEET

HUNTSMAN

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: "HUNTSMAN" Polypropylene

Product Identification Number(s): P9H6M-007, P9R2M-009, P9H6M-010, P9R2M-012, P9R4M-013, P9H8M-015, P9H8M-016, P9R2Z-017, P9H9Z-018, P9H4M-019, P9H4M-019A, P9H8Z-021, P9H7M-022, P9H7M-024, P9H7M-026, P9H9Z-027, P9H1A-029X, P9G1Z-030X, P9H2A-031X, P9H4M-032X, P9H6K-033X, P9G1Z-034X, 7129, 7328, 7521, DS0240H, DS0320BH

Manufacturer/Supplier: Huntsman Corporation, Houston, TX 77227

MSDS Prepared by: Environmental Health and Safety Department, Huntsman Corp., Houston, TX 77227

For Emergency Health, Safety & Environmental Information call: HUNTSMAN 903-239-5200

For Emergency Transportation Information call: CHEMTREC 800-424-9300 **or** HUNTSMAN 903-239-5200

For Other Information, call your Huntsman representative or the Huntsman operator 903-239-5200 (USA)

Chemical Name: Not Applicable

Synonym(s): Not Applicable

Molecular Formula: Not Applicable

Molecular Weight: Not Applicable

Product Use: Plastic

2. COMPOSITION/INFORMATION ON INGREDIENTS

Weight % - Component - (CAS Registry No.)
>70 polyolefin (not applicable)
<30 modifiers/additives (not available)

3. HAZARDS IDENTIFICATION

CAUTION!!! POWDERED MATERIAL MAY FORM EXPLOSIVE DUST-AIR MIXTURES

MOLTEN MATERIAL WILL PRODUCE THERMAL BURNS

HMIS Hazard Ratings: Health - 1, Flammability - 1, Chemical Reactivity - 0
NFPA Hazard Ratings: Health - 1, Flammability - 1, Chemical Reactivity - 0

NOTE: HMIS and NFPA ratings involve data and interpretations that may vary from company to company. They are intended only for rapid, general identification of the magnitude of the specific hazard. To deal adequately with the safe handling of this material, all the information contained in this MSDS must be considered.

4. FIRST-AID MEASURES

Inhalation: If symptomatic, move to fresh air. Get medical attention if symptoms persist.

Eyes: Any material that contacts the eye should be washed out immediately with water. Get medical attention if symptoms persist.

Skin: If burned by contact with molten material, cool as quickly as possible. Do not peel material from skin.

Note to Physicians: Burns should be treated as thermal burns. The material will come off as healing occurs; therefore, immediate removal from the skin is not necessary.

Ingestion: Material is not expected to be absorbed from the gastrointestinal tract so that induction of vomiting should not be necessary.

5. FIRE FIGHTING MEASURES

Extinguishing Media: Water spray, dry chemical.

Special Fire-Fighting Procedures: Wear self-contained breathing apparatus and protective clothing.

Hazardous Combustion Products: Carbon dioxide, carbon monoxide.

Unusual Fire and Explosion Hazards: Powdered material may form explosive dust-air mixtures.

6. ACCIDENTAL RELEASE MEASURES

Sweep or scoop up and remove.

7. HANDLING AND STORAGE

Personal Precautionary Measures: No special precautionary measures should be needed under anticipated conditions of use.

Prevention of Fire and Explosion: Keep from contact with oxidizing materials. Minimize dust generation and accumulation. Refer to NFPA Pamphlet No. 654, "Prevention of Fire and Dust Explosions in the Chemical, Dye, Pharmaceutical, and Plastics Industries."

Storage: Keep container closed.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Limits:

ACGIH Threshold Limit Value (TLV): Not established

OSHA (USA) Permissible Exposure Limit (PEL): Not established

Ventilation: Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. Supplementary local exhaust ventilation, closed systems, or respiratory protection may be needed in special circumstances such as poorly ventilated spaces, mechanical generation of dusts, heating, drying, etc.

Respiratory Protection: If engineering controls do not maintain airborne concentrations to be an acceptable level, an approved respirator must be worn.

Respirator Type: Dust. If respirators are used, a program should be instituted to assure compliance with OSHA Standard 29 CFR 1910.134.

Eye Protection: It is a good industrial hygiene practice to minimize eye contact.

Skin Protection: It is a good industrial hygiene practice to minimize skin contact. When material is heated, wear gloves to protect against thermal burns.

Recommended Decontamination Facilities: Eye Bath, Washing Facilities

9. PHYSICAL AND CHEMICAL PROPERTIES

–	Physical Form:	Solid (pellet)
–	Color:	Varies with formulation
–	Odor:	Slight
–	Odor Threshold:	Not applicable
–	Specific Gravity:	(Water = 1): 0.9. estimated
–	Vapor Pressure:	Negligible
–	Vapor Density	(Air = 1): Not applicable
–	Evaporation Rate:	Not applicable
–	Boiling Point:	Not available
–	Melting Point:	160-166°C (320-331°F)
–	Viscosity:	Not available
–	Solubility in Water:	Negligible
–	pH:	Not applicable
–	Octanol/Water Partition Coefficient:	Not applicable
–	Flash Point:	Not applicable, combustible solid
–	Lower Explosive Limit:	Not available
–	Upper Explosive Limit:	Not available
–	Autoignition Temperature:	Not available
–	Sensitivity to Mechanical Impact	Not available
–	Sensitivity to Static Discharge:	Not available

10. STABILITY AND REACTIVITY

Stability: Stable

Incompatibility: Material can react with strong oxidizing agents

Hazardous Polymerization: Will not occur

11. TOXICOLOGICAL INFORMATION

Effects of Exposure:

Inhalation: Low hazard for usual industrial handling or commercial handling by trained personnel.

Eyes: Low hazard for usual industrial handling or commercial handling by trained personnel.

Skin: Molten material will produce thermal burns.

Ingestion: Expected to be a low ingestion hazard.

12. ECOLOGICAL INFORMATION

This material has not been tested for environmental effects.

13. DISPOSAL CONSIDERATION

Discharge, treatment, or disposal may be subject to national, state, or local laws. Incinerate.

Since emptied containers retain product residue, follow label warnings even after container is emptied.

14. TRANSPORT INFORMATION

- DOT (USA) Classification: Not regulated
- TDG (Canada) Classification: Not regulated
- International Civil Aviation Organization (ICAO) Classification: Not regulated
- International Maritime Dangerous Goods (IMDG) Classification: Not regulated

15. REGULATORY INFORMATION

- OSHA Hazardous chemical(s) according to 29 CFR 1910.1200: None
- Material(s) known to the State of California to cause cancer: None
- Material(s) known to the State of California to cause adverse reproductive effects: None
- Massachusetts Substance List: None
- New Jersey Workplace Hazardous Substance List: None
- Pennsylvania Hazardous Substance List: None
- WHMIS (Canada) Ingredient Disclosure List: None
- WHMIS (Canada) Status: Non-controlled
- Carcinogenicity Classification (components present at 0.1% or more):
  - International Agency for Research on Cancer (IARC): Not listed
  - American Conference of Governmental Industrial Hygienists (ACGIH): Not listed
  - National Toxicology Program (NTP): Not listed

– Occupational Safety and Health Administration (OSHA): Not listed

– Chemical(s) subject to the reporting requirements of Section 313 or Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986 and 40 CFR Part 372: None

– US Toxic Substances Control Act (TSCA): All components of this product are listed on the TSCA inventory or otherwise comply with TSCA premanufacture notification requirements.

16. OTHER INFORMATION

US/Canadian Label Statements:

CAUTION!!!

POWDERED MATERIAL MAY FORM EXPLOSIVE DUST-AIR MIXTURES

MOLTEN MATERIAL WILL PRODUCE THERMAL BURNS

Minimize dust generation and accumulation.

FIRST AID: Get medical attention if symptoms occur. If burned by contact with molten material, cool as quickly as possible. DO NOT PEEL FROM SKIN.

Note to Physicians: Burns should be treated as thermal burns. The material will come off as healing occurs; therefore, immediate removal from the skin is not necessary.

Since emptied containers retain product residue, follow label warnings even after container is emptied.

CAUTION: FOR MANUFACTURING, PROCESSING OR REPACKING BY TRAINED PERSONNEL

EQUISTAR

Equistar Chemicals, LP

One Houston Center, Suite 1600
1221 McKinney Street
P.O. Box 2583
Houston, Texas 77252-2583
Phone: 713.652.7200

FORTIFIBER CORPORATION
55 STARKEY AVE
ATTLEBORO, MA 02703
US

01/09/1999

Dear Customer:

Thank you for your interest in Equistar Chemicals, LP products. Attached is a current Material Safety Data Sheet (MSDS) for the following product(s) purchased or requested by your company.

EQUISTAR Product Name	Product Number	Material Name	MSDS #
Polyethylene Homopolymer	000000000000504504	PETROTHENE NA206000 BULK	000000000083

Where applicable, Equistar has developed MSDS(s) to represent a group of similar products. MSDS distributions will be based on the products' chemical name with subsequent distributions made on a twelve-month cycle to be initiated on January 1 of each year. This MSDS is representative of products characterized by the description, **Polyethylene Homopolymer** and chemical abstract number (CAS#) **9002-88-4**. You will not receive another MSDS for other product grades characterized by the same chemical name and CAS# until an order is placed in the following MSDS distribution cycle.

This MSDS has been prepared in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200). The MSDS provides important health and safety information, we suggest that you review this document prior to handling the product. For the MSDS to be an effective means of hazard communication, it must be made available to all those who handle and are responsible for operations involving this product.

Information contained herein should not be used for specification purposes. We recommend that you consult your occupational health and safety specialist to insure that methods used in the handling, storage and reporting of these products will be adequate and in compliance with applicable laws and regulations.

If additional health and safety information is required, please call the Equistar Product Safety office at (800) 700-0946 or FAX (713) 951-1574.

Sincerely,
Equistar Chemicals, LP
Product Safety

Attachment

Responsible Care®
A Public Commitment

HMIS (USA)

Health Hazard	0
Fire Hazard	1
Reactivity	0

EQUISTAR

Material Safety Data Sheet

Polyethylene Homopolymer

MSDS No.: 000000000083
Validation Date: 01/05/1999
Version: 1.9

SECTION 1: IDENTIFICATION

Product Name: Polyethylene Homopolymer

Chemical Name: Polyethylene Homopolymer

CAS Number: 9002-88-4

Synonyms: Polyethylene, Polyethylene Homopolymer, PE

Chemical Family: Polyethylene Homopolymer

Manufacturer:
Equistar Chemicals, LP
One Houston Center, Suite 1600
1221 McKinney St.
P.O. Box 2583
Houston Texas 77252-2583

Telephone Numbers:
Emergency: CHEMTREC 800 424 9300
Equistar 800 245 4532

Product Safety: Phone 800 700 0946
FAX 713 951 1574

SECTION 2: COMPOSITION

Component Name:	CAS No.	OSHA PEL	OSHA STEL	ACGIH TLV	ACGIH STEL	Carcinogenic Listing*	Concentration by Wt./Mol% Avg.	Min.	Max.
Polyethylene, Homopolymer	9002-88-4	N/L	N/L	N/L	N/L	N/L		98.0	100.0
Proprietary Additives		N/L	N/L	N/L	N/L	N/L			2.0

*1 = OSHA 2 = IARC 3 = NTP 4 = Others N/L = Not Listed **See Section 11 for more information**

SECTION 3: HAZARD IDENTIFICATION

Emergency Overview This material is NOT HAZARDOUS by OSHA HAZARD Communication definition.

Signal Word: CAUTION!

Physical and Health Hazards: Dust may form explosive mixtures with air. Molten polymer may cause thermal burns. Irritating fumes may be produced at process temperatures.

Physical State: Solid.

Color: Translucent to white.

Odor: Faint, mild hydrocarbon odor.

Odor Threshold: No data available.

Potential Health Effects

Routes of Exposure: Eye Contact, Ingestion, Inhalation, Skin Contact

Signs and Symptoms of Acute Exposure: Molten polymer may cause thermal burns. At process temperatures, irritating fumes may cause soreness in the nose and throat, coughing may result. Mechanical irritation is possible.

- *Polyethylene, Homopolymer* Molten polymer may cause thermal burns. At process temperatures, irritating fumes may cause soreness in the nose and throat, coughing may result. Mechanical irritation is possible.

Skin Contact: Molten polymer may cause thermal burns.

Inhalation: At process temperatures irritating fumes may be produced. Inhalation of process fumes may cause soreness in the nose and throat and coughing. Inhaling polyethylene dust is considered a nuisance.

Eye Contact: Mechanical irritation is possible.

Ingestion: Ingestion is unlikely in normal industrial use.

Chronic Health Effects Summary: No known chronic health effects.

- *Polyethylene, Homopolymer* — No known chronic health effects.

Conditions Aggravated by Exposure: No known conditions are aggravated by this material.

SECTION 4: FIRST AID MEASURES

Take proper precautions to ensure your own health and safety before attempting rescue and providing first aid. For specific informaton refer to the Emergency Overview in Section 3 of this MSDS.

Inhalation: If symptoms are experienced, move victim to fresh air, if symptoms persists, obtain medical attention.

Eye Contact: Wash eyes with clean low-pressure water. If irritation persists, seek medical advice.

Skin Contact: If molten material contacts the skin, immediately flush with large amounts of water to cool the affected tissue and polymer. Do not attempt to peel polymer from skin. Get medical attention immediately.

Ingestion: Adverse health effects due to ingestion are not anticipated. If gastric irritation or discomfort persists, seek medical advice.

SECTION 5: FIRE FIGHTING MEASURES

NFPA: Health 0; Fire 1; Reactivity 0; Other

Flammability Classification: Not Classified. Polymer will burn but does not ignite readily.

Flash Point / Method: Not applicable.

Auto-Ignition Temperature: 343 °C (650 °F)

Flammable Limits: LOWER: Not applicable.
UPPER: Not applicable.

Hazardous Combustion Products: Carbon monoxide, olefinic and paraffinic compounds, trace amounts of organic acids, ketones, aldehydes and alcohols may be formed.

Special Conditions to Avoid: Dust may form explosive mixtures with air.

Extinguishing Media: SMALL FIRE: Use DRY chemicals, CO_2, water spray.
LARGE FIRES: Use DRY chemicals, CO_2, or water spray.

Fire Fighting Instructions: **Protective Equipment/Clothing:** Wear a NIOSH-approved positive pressure self-contained breathing apparatus and firefighter turnout gear.

Instructions: Use flooding quantities of water until well after fire is out.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Release Response: Pick up and retain for recycle or disposal. Do not flush spilled material to the sewer or the environment.

Reportable Quantities: See Section 15: Regulatory Information.

SECTION 7: HANDLING AND STORAGE

Handling: Keep material off walking surfaces, it may create a slipping hazard. Polymer dust may form explosive mixtures with air. Avoid accumulation of dust in enclosed space. Use in well-ventilated area. Ground and bond equipment to prevent electrostatic charge when transferring product. Control spilled material to prevent runoff to the sewers and the environment.

Storage: Keep container dry. Store away from excessive heat and away from strong oxidizing agents. Keep container closed to prevent contamination.

SECTION 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION

Engineering Controls: If user operations generate dust or fumes, ventillate area to prevent accumulation.

Personal Protection

Inhalation: Use appropriate respiratory protection where atmosphere exceeds recommended limits. Total Dust (PNOC): ACGIH 10 mg/M3, OSHA 15 mg/M3. Respirable Dust (PNOC) ACGIH 3 mg/M3, OSHA 5 mg/M3.

Skin: Protective clothing such as long sleeves or a lab coat should be worn. When handling heated materials, also be sure to use heat-resistant gloves, boots and face protection.

Eye: Use safety glasses.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point/Range: Not applicable.

pH: Not applicable.

Vapor Pressure: Not applicable.

Viscosity: Not applicable.

Specific Gravity: **Solid/Liquid:** 0.91 - 0.98 (water=1)
Vapor: Not applicable.

Water Solubility: Insoluble.

Octanol/Water Partition Coefficient in Kow: Specific value not available.

Melting/ Freezing Point: 104 - 138 °C (219 - 280 °F)

Evaporation Rate: Not applicable.

SECTION 10: STABILITY AND REACTIVITY

Chemical Stability: The product is stable.

Conditions to Avoid: Avoid contact with strong oxidizers, excessive heat, sparks or open flame.

Incompatibility with: Solid material is softened by some hydrocarbons. Reacts with Fluorine Gas.

Hazardous Products of Decomposition: Not expected to decompose under normal conditions.

Hazardous Polymerization: Not likely.

Reactions with Air and Water: Does not react with air, water or other common materials.

SECTION 11: TOXICOLOGICAL INFORMATION

Summary: Not considered to be toxic to humans or animals.

Component

- *Polyethylene, Homopolymer*

LC50 (INHL): Mouse 12 GM/M3/30M

SKIN EFFECTS: No skin effects are expected from polyethylene contact.

ACUTE ORAL EFFECTS: Animal studies showed no adverse health effects on the digestive system when fed up to 20% polyethylene.

ACUTE INHALATION EFFECTS: Rats inhaling polyethylene DUST developed mild inflammatory changes in the lungs. Prolonged inhalation of thermal degradation products from polyethylene caused neurological effects in rats.

SUBCHRONIC EFFECTS: Subchronic, 50 to 90 day, feeding studies conducted on rats, dogs and swine showed no effects from dietary levels of 1 to 20% powdered and shredded polyethylene. IARC has listed polyethylene as a Group 3 substance (not classifiable as to carcinogenicity to humans).

REPRODUCTIVE / DEVELOPMENTAL EFFECTS: No reproductive or developmental effects are expected.

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity: Ecotoxicity is expected to be low based on the low water solubility of polymers. Pellets can be harmful to birds and fish if ingested.

Environmental Fate: No information found in our selected references.

Bioaccumulation: Not expected to occur.

SECTION 13: DISPOSAL CONSIDERATIONS

This material is NOT classified as a hazardous Material by RCRA. Use only licensed transporters and permitted disposal facilities and conform to all laws. Recycle to process, if possible.

SECTION 14: TRANSPORT INFORMATION

Proper Shipping Name: Polyethylene, not liquid

DOT Hazard Class: Non-regulated.

UN/NA ID:	Not Regulated	**Marine Pollutant:**	No.
Packing Group:	Not applicable.	**NAER Guidebook:**	Not Regulated
Labels:	Non-regulated.	**DOT Status:**	Non-regulated.

SECTION 15: REGULATORY INFORMATION

TSCA: All components of this product are listed on the TSCA 8(b) inventory. If identified components of this product are listed under the TSCA 12(b) Export Notification rule, they will be listed below.

TSCA 12(b) Component	Listed under TSCA Section

SARA - Section 313 Emissions Reporting: This product contains no SARA 313 "toxic chemicals" above threshold levels.

Component	Reporting Threshold

SARA - Section 311/312: No components present in this product are subject to the reporting requirements of this statute.

CERCLA Hazardous Substances and their ReportableQuantities:

Component	Reportable Quantity

California Prop. 65:
Proposition 65 requires manufacturers or distributors of consumer products into the State of California to provide a warning statement if the product contains ingredients for which the State has found to cause cancer, birth defects or other reproductive harm. If this product contains an ingredient listed by the State of California to cause cancer or reproductive toxicity it will be listed below.

SECTION 16: OTHER INFORMATION

Disclaimer of Liability: CAUTION DO NOT USE EQUISTAR MATERIALS IN APPLICATIONS INVOLVING IMPLANTATION WITHIN THE BODY; DIRECT OR INDIRECT CONTACT WITH THE BLOOD PATHWAY; CONTACT WITH BONE, TISSUE, TISSUE FLUID, OR BLOOD; OR PROLONGED CONTACT WITH MUCOUS MEMBRANES. EQUISTAR MATERIALS ARE NOT DESIGNED OR MANUFACTURED FOR USE IN IMPLANTATION IN THE HUMAN BODY OR IN CONTACT WITH INTERNAL BODY FLUIDS OR TISSUES. EQUISTAR WILL NOT PROVIDE TO CUSTOMERS MAKING DEVICES FOR SUCH APPLICATIONS ANY NOTICE, CERTIFICATION OR INFORMATION NECESSARY FOR SUCH MEDICAL DEVICE USE REQUIRED BY FDA REGULATION OR ANY OTHER STATUTE. EQUISTAR MAKES NO REPRESENTATION, PROMISE, EXPRESS WARRANTY OR IMPLIED WARRANTY CONCERNING THE SUITABILITY OF THESE MATERIALS FOR USE IN IMPLANTATION IN THE HUMAN BODY OR IN CONTACT WITH INTERNAL BODY TISSUES OR FLUIDS.

The information on this MSDS was obtained from sources which we believe are reliable. However, the information is provided without any warranty, expressed or implied, regarding its correctness. Some information presented and conclusions drawn herein are from sources other than direct test data on the substance itself. The conditions or methods of handling, storage, use and disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage, or expense arising out of or in any way connected with handling, storage, use, or disposal of this product. This MSDS was prepared and is to be used only for this product. If the product is used as a component in another product, this MSDS information may not be applicable.

Latest Revision(s): Conversion to SAP template.

END OF DOCUMENT

MATERIAL SAFETY DATA SHEET

Sun Chemical Corporation
3301 HUNTING PARK AVE
PHILADELPHIA, PA 19132

MSDS Distribution: (215) 223-8220
Regulatory Information: (201) 933-4500
Emergency Phone No.: (201) 804-8228
(24 hours)

1. PRODUCT IDENTIFICATION

Product Name	NC90-6124
Product Description	H'POLY BLACK 415202
Product Category	Water Flexo Paper Ink
MSDS Identification No.	000000243404
MSDS Date	02/08/99

2. COMPOSITION (Hazardous Components)

The components listed below are identified as hazardous chemicals based upon the criteria of the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Chemical Name	CAS Number	Concentration (wt %)
Propylene Glycol Monomethyl Ether	107-98-2	3.91
Isopropyl Alcohol	67-63-0	2.92

For further information on the individual hazardous component(s) listed above, please refer to the Toxicological Information section of the MSDS (Section 11).

3. PRODUCT HAZARDS IDENTIFICATION

Emergency Overview

Combustible Vapor.
Material may be irritating to skin and eyes.
May cause central nervous system effects.

Potential Health Effects

Inhalation and dermal contact are expected to be the primary routes of occupational exposure. The following statements are based upon an assessment of the health effects associated with the components present in this product mixture.

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Eye

This product may cause mild to moderate eye irritation. Direct contact or excessive exposure to vapors may cause redness, tearing and stinging.

Skin

This product may cause mild to moderate skin irritation. Prolonged or repeated exposure may result in contact dermatitis which is characterized by redness, itching, drying and/or cracking of the skin.

Inhalation

This product is not expected to cause respiratory tract irritation under conditions of intended use. Exposure to high concentrations of vapor may cause headache, nausea, dizziness, loss of coordination and fatigue.

Ingestion

Ingestion of this product may cause gastrointestinal irritation, headache, nausea, vomiting, diarrhea, dizziness, loss of coordination and fatigue.

Chronic Effects

No chronic health hazards are associated with the components present in this product.

Medical Conditions Aggravated by Exposure

Preexisting skin disorders may be aggravated by exposure to this product.

4. FIRST AID MEASURES

Eye Contact

In case of direct contact, flush eyes with clean water for at least 15 minutes. Seek medical attention if irritation or redness develops and persists.

Skin Contact

Remove contaminated clothing. Wash affected area thoroughly with soap and water. Seek medical attention if irritation or redness develops and persists.

Inhalation

Remove affected person away from source of exposure and into fresh air. If breathing difficulties develop, oxygen should be administered by qualified personnel. If breathing has stopped give artificial respiration. Seek immediate medical attention.

Ingestion

Ingestion is an unlikely route of exposure under normal industrial conditions. However, if appreciable quantities of this product are accidentally swallowed, seek immediate medical attention.

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5. FIRE FIGHTING MEASURES

Flash Point (degree F)	Equal or greater than 100 F and less than or equal to 141 F (Closed Cup)
Flash Point Category (OSHA/NFPA)	II - Combustible
Lower Flammability Limit in Air (% by Vol)	1.6

NOTE : Flash point value/category has been derived from testing of products of similar composition.

Extinguishing Media

This material is a water-based product and as supplied is not expected to burn. The residual material and/or product container may support combustion. If this should occur, use water, multipurpose foam, dry chemical or carbon dioxide.

Fire Fighting Instructions

The use of self-contained breathing apparatus is recommended for firefighters. Water spray may be used to cool containers exposed to heat near flame.

Fire and Explosion Hazards

While this product is not expected to support combustion, its vapors may be ignited by heat, sparks, flame or static electricity.

6. ACCIDENTAL RELEASE MEASURES

Eliminate all sources of ignition. Keep unnecessary personnel away from spill area. Ventilate area of spill; use appropriate personal protective equipment.

For large spills, a multipurpose foam may be used to suppress vapors. Contain the spill by diking with sand or other inert material. Keep out of drains, sewers or waterways. Transfer product to suitable containers for recovery or disposal. If necessary, follow emergency response procedures.

For small spills, use an inert absorbent material. Water may be used to clean the area of the spill.

7. HANDLING AND STORAGE

Keep containers tightly closed. Keep containers cool and dry. Protect from freezing. Use and store this product with adequate ventilation. Use appropriate protective equipment when handling this product and maintain good personal hygiene practices.

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8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Controls

Provide adequate general (dilution) and/or local exhaust ventilation to maintain airborne contaminants below the established exposure limits. It is suggested that a source of clean water be made available in work area for flushing eyes and skin.

Personal Protective Equipment

Eye / Face Protection

The use of chemical splash goggles or safety glasses is recommended to prevent eye contact.

Skin Protection

The use of impermeable, solvent resistant gloves is advised to prevent skin contact. Use chemical resistant apron if splash hazard exists.

Respiratory Protection

If vapor concentration does not exceed established exposure limits, respiratory protection is not normally required.

If vapor concentration exceeds established exposure limits, use a NIOSH/ MSHA approved respirator. Respirators should be selected and used in accordance with OSHA directive 29 CFR 1910.134.

Established Exposure Guidelines

Chemical Name	ACGIH-TLV		OSHA-PEL	
	TWA	STEL	TWA	STEL
Propylene Glycol Monomethyl Ether	100.00 ppm	150.00 ppm	100.00 ppm	150.00 ppm
Isopropyl Alcohol	400.00 ppm	500.00 ppm	400.00 ppm	500.00 ppm

9. PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point / Range (degree F)	180 F - 257 F
Typical Density (lbs/gal)	8.87
Vapor Density (excluding water) vs. Air	Heavier
Evaporation Rate (vs. Butyl Acetate)	Slower
Appearance	Black Liquid

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Volatile Organic Compounds (wt%) 8.23

10. STABILITY AND REACTIVITY

Stability

Stable. Hazardous polymerization will not occur.

Conditions to Avoid

Keep product away from heat, sparks, and open flames.

Incompatibility

This product is incompatible with strong acids or bases and oxidizing agents.

Hazardous Decomposition Products

By high heat and fire: carbon dioxide, carbon monoxide and/or oxides of nitrogen and sulfur.

11. TOXICOLOGY OF COMPONENTS

Information pertaining to the health effects and toxicity of the "pure" form of the hazardous components identified in Section 2 is presented below. This information reflects the known hazards associated with the component and may not reflect that of the purchased material due to concentration (dilution) effects. Review and interpretation by your Hazard Communication Department is recommended.

Propylene Glycol Monomethyl Ether (3.91 %)

May cause eye and skin irritation. Eye contact may cause stinging, watering and redness. Can be absorbed through the skin in harmful amounts. Other effects of overexposure may include irritation of the nose and throat irritation of the digestive tract, vomiting, and nervous system depression (e.g., headache, drowsiness, dizziness, loss of coordination and fatigue).

Isopropyl Alcohol (2.92 %)

Causes eye and skin irritation. Eye contact may cause stinging, watering and redness. Skin contact may cause redness and burning of skin. Skin irritation may be severe after repeated or prolonged exposure, causing drying and cracking of skin. Other effects of overexposure may include irritation of the nose and throat, irritation of the digestive and respiratory tracts, vomiting and signs of nervous system depression (e.g., headache, drowsiness, dizziness, loss of coordination and fatigue).

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12. DISPOSAL CONSIDERATIONS

Dispose of product in accordance with local, county, state and federal environmental regulations. Do not introduce this product directly into public sewer systems. The introduction of product waste and/or water used for cleaning purposes into public sewer systems without pretreatment may violate your discharge permits.

Containers of this product may be hazardous when emptied. Since emptied containers may retain product residues, all hazard precautions given in this data sheet should be observed.

13. REGULATORY INFORMATION

Toxic Substances Control Act (TSCA)

The chemical components of this product are listed or have been registered for inclusion on the Section 8(B) Chemical Substance Inventory List (40 CFR 710).

EPCRA Section 313 Supplier Notification

This product does not contain any substances in quantities which must be reported under the supplier notification requirements of Section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 (40 CFR 372).

Clean Air Act Amendment (HAPs)

This product does not contain any substances which are defined as Hazardous Air Pollutants under Title III of the Clean Air Act Amendments of 1990.

California Proposition 65

This product does not contain any chemicals which are defined by the state of California to cause cancer and/or reproductive toxicity.

OSHA Hazard Communication Label for Product
CAUTION!

COMBUSTIBLE VAPOR
MAY CAUSE SKIN AND EYE IRRITATION
MAY CAUSE CENTRAL NERVOUS SYSTEM EFFECTS
Please refer to the MSDS for more details.
Keep away from heat and flame.
Keep containers closed.
Use with adequate ventilation.
Avoid contact with eyes, skin and clothing.
Use appropriate personal protective equipment.
Avoid breathing vapor.
Wash thoroughly after handling.
FIRST AID : In case of contact, flush eyes or skin with plenty of water. Remove contaminated clothing. Seek medical attention if irritation develops or persists. If inhaled, remove to fresh air. If breathing is

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difficult, give oxygen. If not breathing, give artificial respiration.
Seek medical attention.
IN CASE OF FIRE, use water, multipurpose foam, dry chemical or carbon dioxide.
Empty containers may retain product residues, all hazard precautions given on this label should be observed.
DO NOT REMOVE THIS LABEL.

14. ADDITIONAL COMMENTS

Hazardous Materials Information System (HMIS)

Health 1 Flammability 2 Reactivity 0

NOTICE : These ratings are intended only for the immediate and general identification of acute hazards. Sun Chemical is providing this information on a voluntary basis as a guide for our customers. The use and interpretation of this information may vary from company to company. All information contained in this data sheet should be considered in order to adequately deal with the safe handling of this material.

Revision Date

02/06/99

The information presented in this data sheet represents a compilation of information generated from our suppliers and other recognized sources of scientific evidence and chemical information. To the best of our knowledge and belief, it is accurate and reliable as of the date of issue. However, no warranty, express or implied, including any warranty of merchantability, fitness for any use, or any other guarantee is offered or implied regarding the accuracy of such data, the results to be obtained from the use thereof, the safety of this product, or the hazards connected with the use of this material. Since the conditions of handling and use of this material are beyond our control, Sun Chemical shall assume no liability for damages incurred by the use of the material. This information and product are furnished on the condition that the person receiving them shall make his own determination as to the suitability and completeness of this information, the safety measures necessary to handle this product, and the actions needed to comply with all applicable Federal, State, and Local Legislation.

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VOLATILE COMPONENT INFORMATION

		US EPA Designate
A. Product Density:		
1.)	8.87 LB Product /gal Product	=(Dc)s
B. Nonvolatile Content:		
1.)	40.04 Weight percent of nonvolatiles in product	=(Wn)s
2.)	34.48 Volume percent of nonvolatiles in product	=(Vn)s
3.)	10.30 Density, lb nonvolatiles/gal nonvolatiles	=(Dn)s
C. Volatiles:		
1.)	59.96 Weight percent of total volatiles in product	=(Wv)s
2.)	6.11 Density, lb volatiles/gal volatiles	=(Dv)s
D. Water Content:		
1.)	41.00 Weight percent of water in product	=(Ww)s
2.)	56.78 Volume percent of water in product	=(Vw)s
E. Organic Volatiles, (VOCs):		
1.)	6.13 Weight percent of organic volatiles in product	=(Wo)s
2.)	16.24 Volume percent of organic volatiles in product	=(Vo)s
3.)	7.13 Density, lb organic volatiles /gal organic volatiles	=(Do)s
4.)	13.73 Weight percent of VOCs in total volatiles	=(Wo)v
5.)	18.81 Volume percent of VOCs in total volatiles	=(Vo)v

F. VOC Content in Product Expressed in Other Terms:

1.) a.) 0.73 lb VOC / gal Product
1.) b.) 87.46 grams VOC / liter Product
2.) a.) 1.65 lb VOC / gal Product less water & exempt solvent
2.) b.) 198.66 grams VOC / liter Product less water & exempt solvent
3.) 2.12 lb VOC / gal total nonvolatiles

G. Volatiles: (all VOCs, HAPs, water & ammonia)

Ingredient	CAS Number	Weight Percent	Density (lb/gal)
Propylene Glycol Monomethyl Ether	107-98-2	3.91	7.69
Isopropyl Alcohol	67-63-0	2.92	6.56
n-Propyl Alcohol	71-23-8	0.93	6.71
Ammonia	7664-41-7	0.73	5.99
Dipropylene Glycol Methyl Ether	34590-94-8	0.22	7.92

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Diethylaminoethanol	100-37-8	0.19	7.34
Non HAP/SARA Organic Volatiles		0.06	7.75
Water	7732-18-5	51.00	8.34

NOTE : The term Volatile Organic Compounds (VOC) refers only to volatile organic materials as defined by the US EPA and does not include water, ammonia, acetone or other exempt solvents. Unless otherwise stated, the VOC values reported above are based on materials of construction.

DuPont Polymers

SUR001 | Revised 9-FEB-1998 | Printed 10-FEB-1999

"SURLYN" IONOMER RESIN ALL IN SYNONYM LIST SUR001

CHEMICAL PRODUCT/COMPANY IDENTIFICATION

Material Identification
"SURLYN" is a registered trademark of DuPont.

 # Tradenames and Synonyms
"SURLYN" AD8110SB, AD8112, AD8112SB, AD8113,
"SURLYN" AD8118-1, AD8119,
"SURLYN" AD8123SB, AD8124, AD8133, AD8134SB, AD8137SBR,
"SURLYN" AD8144, AD8145SB, AD8162, AD8163, AD8172, AD8195,
"SURLYN" AD8198, AD8199, AD8206, AD8255, AD8273,
"SURLYN" AD8281SB, AD8396-2, AD8404-1, AD8414-1,
"SURLYN" AD8422-2, AD8422-3, AD8422-5, AD8422-6,
"SURLYN" AD8423SB, AD8427-1,
"SURLYN" AD8441, AD8444, AD8458, AD8460, AD8463,
"SURLYN" AD8464-1, AD8464-2, AD8467, AD8469,
"SURLYN" AD8511, AD8512, AD8514, AD8515,
"SURLYN" AD8530, AD8531, AD8537, AD8541, AD8542,
"SURLYN" AD8545, AD8547, AD8548, AD8552,
"SURLYN" AD8563, AD8567, AD8569, AD8570, AD8573, AD8575,
"SURLYN" AD8578, AD8579, #
"SURLYN" BR-1, CFM, CFM-2, CS8757, CS8791,
"SURLYN" E185SB, E187SB, F1605, HPF, HP2000, HPX2000,
"SURLYN" HT2010, HT2010LM, LMG1,
"SURLYN" LS410, LS410SB, LS414, LS424, LS426,
"SURLYN" LTAD8111, NWL, PC100,
"SURLYN" PC150, PC300, PC350, PK101,
"SURLYN" RA3701,
"SURLYN" RX74, RX86, RX86-1, RX87, RX95,
"SURLYN" RX1652-1, RX3737-1, RX3737-2, RX3739,
"SURLYN" RX3986-1, RX8422-4,
"SURLYN" SH1, SPF-1, SPF-2, SPM-1, TP1, WP1, 1554P, 1601,
"SURLYN" 1601-2, 1601-2HB, 1601-2LM, 1601ACA, 1601B,
"SURLYN" 1601B-2, 1601LM, 1601LSB, 1601S, 1601SB, 1601T,
"SURLYN" 1605, 1605SBR, 1605SBRC,
"SURLYN" 1650, 1650B, 1650SB, 1650SB-V,
"SURLYN" 1652, 1652-1, 1652-1HS,
"SURLYN" 1652R, 1652R-1, 1652SB, 1652SB-CT, 1652SB-1,
"SURLYN" 1652SBR, 1652SR, 1652SR-1,
"SURLYN" 1702, 1702-1, 1702HM, 1702LM, 1702SBR-1,

(Continued)

CHEMICAL PRODUCT/COMPANY IDENTIFICATION(Continued)

"SURLYN" 1705, 1705-1, 1706, 1707, 1707-2, 1707LM,
"SURLYN" 1801, 1802, 1855, 1856, 1857, 1901, 2601, 2601B,
"SURLYN" 6120, 6320, 6910, 7207,
"SURLYN" 8020, 8110SB-1, 8110SB-V, 8140, 8140-1, 8150, 8172,
"SURLYN" 8220, 8240, 8396-2, 8527, 8528, 8528P,
"SURLYN" 8533, 8533L, 8534, 8550, 8660, 8660P, 8670,
"SURLYN" 8919, 8920,
"SURLYN" 8920P, 8921, 8940, 8940DC, 8940P, 8941, 8941EB,
"SURLYN" 8941P, 8945,
"SURLYN" 9120, 9150, 9220, 9450, 9450P,
"SURLYN" 9520, 9520P, 9520W,
"SURLYN" 9533, 9533L, 9650, 9650-S, 9720, 9721, 9730, #
"SURLYN" 9910, 9910BS, 9945, 9950, 9970, 9970FB, 9970P

Company Identification

MANUFACTURER/DISTRIBUTOR
DUPONT PACKAGING & INDUSTRIAL POLYMERS
1007 MARKET STREET
WILMINGTON, DE 19898

PHONE NUMBERS

Product Information	1-(800)441-7515
Transport Emergency	1-(800)424-9300
Medical Emergency	1-(800)441-3637

COMPOSITION/INFORMATION ON INGREDIENTS

Components

Material	CAS Number	%
ETHYLENE/METHACRYLIC ACID COPOLYMERS, PARTIAL MAGNESIUM, SODIUM OR ZINC SALT		>99
*ZINC COMPOUNDS (SOME COPOLYMERS)	7440-66-6	<5

* Disclosure as a toxic chemical is required under Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR part 372.

HAZARDS IDENTIFICATION

Potential Health Effects

ADDITIONAL HEALTH EFFECTS

Before using "SURLYN" Ionomer Resins, read the bulletin on the safe handling of these polymers.

No information available for this "SURLYN" Ionomer Resin or for the ethylene copolymer partial metal salt. Based on its similarity to other polymers, this "SURLYN" resin is predicted to have low toxicity.

(Continued)

HAZARDS IDENTIFICATION(Continued)

INGESTION: Not a probable route of exposure. Toxicity is predicted to be low for all types but feeding tests have been conducted only on two sodium ionomers. No pathologic changes in any organ were seen in 90 day feeding tests with rats and dogs.

SKIN: No data are available. However, based on experience with handling these polymers, no unusual dermatitis problem is expected from routine handling. Molten polymer contacting the skin will cause thermal burns.

EYE: Mechanical irritation only.

INHALATION: Polymer is not respirable as sold. At processing temperatures above 325 deg C, fumes irritating to the eyes, nose and throat may be evolved. Exposure may result in redness, itching and tearing of the eyes and soreness in the nose and throat together with coughing.

Carcinogenicity Information

None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, OSHA or ACGIH as a carcinogen.

FIRST AID MEASURES

First Aid

- INHALATION

No specific intervention is indicated as the compound is not likely to be hazardous by inhalation. Consult a physician if necessary.

SKIN CONTACT

The compound is not likely to be hazardous by skin contact but cleansing the skin after use is advisable.

EYE CONTACT

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Call a physician.

INGESTION

No specific intervention is indicated as compound is not likely to be hazardous by ingestion. Consult a physician if necessary.

(Continued)

FIRE FIGHTING MEASURES

Flammable Properties
Fire and Explosion Hazards:

The solid polymer can be combusted only with difficulty.

Hazardous gases/vapors produced in fire are carbon monoxide, hydrocarbon oxidation products, including, organic acids, aldehydes, alcohols, zinc, or, sodium oxides.

Extinguishing Media
Water, Foam, Dry Chemical, CO2.

Fire Fighting Instructions
Keep personnel removed and upwind of fire. Wear self-contained breathing apparatus.

ACCIDENTAL RELEASE MEASURES

Safeguards (Personnel)
NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

Spill Clean Up
Sweep up to avoid slipping hazard.

Recover undamaged and minimally contaminated material for reuse and reclamation.

HANDLING AND STORAGE

Handling (Personnel)
See FIRST AID and PERSONAL PROTECTIVE EQUIPMENT SECTIONS.

Storage
Store in a cool, dry place. Keep container closed to prevent contamination.

EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls
Use sufficient ventilation to keep employee exposure below recommended limits.

Personal Protective Equipment
EYE/FACE PROTECTION

Wear safety glasses. Wear coverall chemical splash goggles and face shield when possibility exists for eye and face contact due to splashing or spraying of molten material. A full face mask respirator provides protection from eye irritation.

(Continued)

EXPOSURE CONTROLS/PERSONAL PROTECTION(Continued)

RESPIRATORS

A NIOSH/MSHA approved air purifying respirator with an organic vapor cartridge with a dust/mist filter may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air purifying respirators is limited. Use a positive pressure air supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air purifying respirators may not provide adequate protection.

PROTECTIVE CLOTHING

If there is potential contact with hot/molten material, wear heat resistant clothing and footwear.

Exposure Guidelines

Exposure Limits

"SURLYN" IONOMER RESIN ALL IN SYNONYM LIST SUR001

PEL (OSHA)	Particulates (Not Otherwise Regulated) 15 mg/m3, 8 Hr. TWA, total dust 5 mg/m3, 8 Hr. TWA, respirable dust

PHYSICAL AND CHEMICAL PROPERTIES

Physical Data

Melting Point	80-100 C (176-212 F)
% Volatiles	Negligible
Solubility in Water	Negligible
Odor	Mild methacrylic acid
Form	Pellets
Color	White
Specific Gravity	NA

STABILITY AND REACTIVITY

Chemical Stability

Stable at normal temperatures and storage conditions.

Incompatibility with Other Materials

Incompatible or can react with oxidizing agents.

Decomposition

Decomposes with heat.

Decomposition temperature 325 C (617 F)

Hazardous gases or vapors can be released, including carbon monoxide, hydrocarbon oxidation products, including, organic acids, aldehydes, alcohols.

Polymerization

Polymerization will not occur.

(Continued)

ECOLOGICAL INFORMATION

Ecotoxicological Information
AQUATIC TOXICITY:

No information is available. Toxicity is expected to be low based on insolubility in water.

DISPOSAL CONSIDERATIONS

Waste Disposal
Preferred options for disposal are (1) recycling, (2) incineration with energy recovery, and (3) landfill. The high fuel value of this product makes option 2 very desirable for material that cannot be recycled. Treatment, storage, transportation, and disposal must be in accordance with applicable federal, state/provincial, and local regulations.

TRANSPORTATION INFORMATION

Shipping Information
DOT

Proper Shipping Name	Not regulated

REGULATORY INFORMATION

U.S. Federal Regulations

TSCA Inventory Status	In compliance with TSCA Inventory requirements for commercial purposes.

State Regulations (U.S.)
STATE RIGHT-TO-KNOW LAWS

No substances on the state hazardous substances list, for the states indicated below, are used in the manufacture of products on this Material Safety Data Sheet.

SUBSTANCES ON THE PENNSYLVANIA HAZARDOUS SUBSTANCES LIST PRESENT AT A CONCENTRATION OF 1% OR MORE (0.01% FOR SPECIAL HAZARDOUS SUBSTANCES): None known.

WARNING: SUBSTANCES KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER, BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM: None known.

SUBSTANCES ON THE NEW JERSEY WORKPLACE HAZARDOUS SUBSTANCE LIST PRESENT AT A CONCENTRATION OF 1 % OR MORE (0.1% FOR SUBSTANCES IDENTIFIED AS CARCINOGENS, MUTAGENS OR TERATOGENS): None known.

(Continued)

OTHER INFORMATION

Additional Information

MEDICAL USE: CAUTION: Do not use in medical applications involving permanent implantation in the human body. For other medical applications see DuPont CAUTION Bulletin No. H-50102.

The data in this Material Safety Data Sheet relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process.

Responsibility for MSDS	T. E. SCHROER
Address	DUPONT PACKAGING & INDUSTRIAL POLYMERS CHESTNUT RUN PLAZA 713 WILMINGTON, DE 19880-0713
Telephone	302-999-4664

# Indicates updated section.

End of MSDS

DOVER CHEMICAL CORPORATION
Subsidiary of ICC Industries
MATERIAL SAFETY DATA SHEET

SECTION I

PRODUCT NAME OR NUMBER (as it appears on label) CHLOREZ 700	ISSUE DATE April 6, 1992
MANUFACTURER'S NAME DOVER CHEMICAL CORPORATION	EMERGENCY TELEPHONE NO. (216) 343-7711
ADDRESS W. 15th & Davis Sts., Dover, OH 44622	CONTACT PHONE NO. (216) 343-7711, Ext. 204
SHIPPING NAME Chlorinated Paraffin	DOT HAZARD CLASS N/A
CHEMICAL FAMILY Chlorinated Paraffin	CAS NUMBER 63449-39-8

SECTION II — HAZARDOUS INGREDIENTS

CAS REGISTRY NO.	% W	CHEMICAL NAME(S)	Listed as a Carcinogen In NTP, IARC or OSHA
			N/A

SECTION III — HANDLING & STORAGE

DO NOT WEAR CONTAMINATED CLOTHING — WASH PRIOR TO EATING, DRINKING, SMOKING, OR USE OF RESTROOM AND WHEN LEAVING WORK ✓ Do not store near heat or flame. Prevent static discharge when handling and emptying container.

SECTION IV — PHYSICAL DATA

BOILING POINT N/A °F °C		SPECIFIC GRAVITY (H_2O=1) 25°/25°C	1.6	Softening Point °C.	95-110
VAPOR PRESSURE @ °F °C ☐ mm Hg ☐ psi	Unknown	PERCENT VOLATILE BY VOLUME (%)	Unknown		
VAPOR DENSITY (AIR=1)	Unknown	EVAPORATION RATE (BA=1)	Unknown		
SOLUBILITY IN WATER	Nil	PERCENT SOLID BY WEIGHT (%)	100		
APPEARANCE AND ODOR	White to cream powder or flake - no distinct odor.				

SECTION V — FIRE AND EXPLOSION HAZARD DATA

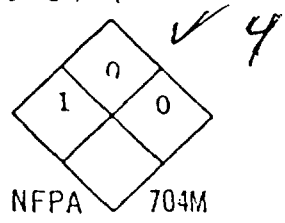
FLASH POINT ✓ °F >200 °C	method used C.O.C.	FLAMMABLE LIMITS	LEL Not established	UEL
EXTINGUISHING MEDIA	Use dry chemical, foam or water fog if this material is involved in a fire.			
SPECIAL FIRE FIGHTING PROCEDURES	Protect against decomposition product ✓ wear self-contained breathing apparatus.			
UNUSUAL FIRE AND EXPLOSION HAZARDS	✓ Material wil become molten and free flowing at temperatures above the softening point.			

Chemical Name: Antimony Trioxide
CAS No.: 1309-64-4

J00 V 4

MATERIAL SAFETY DATA SHEET

(Similar to OSHA Form 20)



M-33-40R

SECTION I

SUPPLIERS NAME	The Harshaw Chemical Company	EMERGENCY TELEPHONE NUMBER	216/721-8300
ADDRESS	1945 E. 97th Street Cleveland, OH 44106	CODE	
CHEMICAL NAME	Antimony Oxide	PRODUCT NAME	Antimony Oxide, All Grades
CAS No.	1309-64-4	FORMULA	Sb_2O_3

SECTION II - HAZARDOUS INGREDIENTS OF MIXTURES

MATERIAL OR COMPONENT	%	THRESHOLD LIMIT VALUE

N/A (not a mixture, >99% pure)

SECTION III - PHYSICAL DATA

BOILING POINT	1456° C	MELTING POINT	656° C
SPECIFIC GRAVITY (H_2O=1)	5.7	VAPOR PRESSURE	0.2 mmHg @ 525° C
OR DENSITY (Air=1)	N/A	SOLUBILITY IN H_2O (% BY WT.)	.001g/100ml H_2O @ 25° C
% VOLATILES BY VOL	N/A	EVAPORATION RATE (BUTYL ACETATE=1)	N/A
APPEARANCE AND ODOR	White, crystalline powder; odorless		

SECTION IV - FIRE AND EXPLOSION DATA

Not a fire hazard. Antimony oxide is used as a flame retardent.

SECTION V - HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE: 0.5mg/m³ as Sb (OSHA TWA)

EFFECTS OF OVEREXPOSURE:

Acute : Eyes - Causes moderate foreign particle irritation.
Skin - Prolonged or repeated skin contact causes skin irritation and red, pimply, skin eruptions or lesions referred to as "antimony measles." Irritation is aggravated when skin surface is moist as when perspiring.
Inhalation - Causes irritation of the upper respiratory tract.
Chronic : Chronic inhalation has resulted in benign pneumoconiosis. Long term inhalation studies indicate antimony oxide causes malignant lung tumors in laboratory rats.

EMERGENCY & FIRST AID PROCEDURES:

Eyes : Immediately flush with plenty of water for at least 15 minutes; call a physici
Skin : Wash contaminated area with plenty of water. Call a physician if irritation develops or persists.
Inhalation : Remove to fresh air; if breathing difficult, give oxygen. Call a physician.

(C)

SECTION VI - REACTIVITY DATA

[illegible]DITIONS CONTRIBUTING TO INSTABILITY: None Expected

INCOMPATABILITY: None Expected

HAZARDOUS DECOMPOSITION PRODUCTS: None Expected

SECTION VII - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Wear an approved respirator. If not contaminated, scoop up for reuse. If contaminated, scoop or vacuum into container for disposal. Avoid dusting.

WASTE DISPOSAL METHOD: Dispose of in accordance with federal, state, and local laws. Handle full or empty bags in a manner to avoid dusting. Empty containers should be disposed of in a manner which will not cause dusting during transportation or from the ultimate disposal site.

SECTION VIII - PROTECTIVE EQUIPMENT

VENTILATION: Local exhaust ventilation sufficient to maintain the employee exposure level as far below the OSHA limit as possible.

PERSONAL PROTECTIVE EQUIPMENT:

1) NIOSH/MSHA approved respiratory protection as needed.

2) Safety glasses, chemical goggles.

3) Gloves; protective clothing as necessary to prevent skin contact.

SECTION IX - SPECIAL PRECAUTIONS

1. Use only with adequate ventilation.
2. Avoid breathing dusts.
3. Avoid skin and eye contact.
4. Wash thoroughly after handling.
5. Store in dry, well-ventilated area.
6. Keep containers closed.
7. Change clothing if exposed to heavy dusts or spillage; clothing should be laundered before reuse.

SECTION X - PERSONNEL SAMPLING PROCEDURE

Refer to Antimony NIOSH Criteria Document, September, 1978 for sampling and analytical procedures and additional information.

Continental Mineral Processing

Continental Mineral Proc. Corp.
P.O. Box No. 62005
Cincinnati, Ohio 45262-0005
☎ (513) 771-7190
Fax No. (513) 771-9153

MATERIAL SAFETY DATA SHEET

IDENTIFICATION

Name
Florida Zircon Sand
Florida Zircon Flour
Australian Zircon Sand
Australian Zircon Flour
Virginia Zircon Sand
Virginia Zircon Flour
Richard Bay Zircon Sand
Richard Bay Zircon Flour

Grade
Standard; Premium;
Coarse, Medium, Fine Zircon

Synonyms
Zirconium Silicate; Zircon;
200, 325, 400, 600 Zircon Flour
Z-Std, Z-Coarse, Zircon Sand

Processor/Distributor
Continental Mineral Processing
Corporation

Chemical Family
Mineral Sand

TSCA Inventory Status
Reported/Included

Sara/Title III Status
Not listed in Federal Register
See Additional Information

Product Information Phone
800-441-9442 or
513-771-7190

Medical Emergency Phone
800-441-9442
513-771-7190

Transportation Emergency Phone
CHEMTREC 800-424-9300
or 513-771-7190

PHYSICAL DATA

Boiling Point, 760 mmHg
Not applicable

Specific Gravity
4.5 – 4.7

Vapor Density
Not volatile

pH Information
Not applicable

Form
Solid

Color
White or Tan

Melting Point
2100-2300 degrees C
3810-4170 degrees F

Vapor Pressure
Not volatile

Solubility in Water
Insoluble

Evaporation Rate (Butyl Acetate=1)
Not volatile

Appearance
Free-flowing sand or
Free-flowing pulverized sand

Odor
Odorless

COMPOSITION/INFORMATION ON INGREDIENTS

Material(s)	CAS No.	Typical %*
Standard and Premium Zircon:		
Zircon	14940-68-2	97.0
Kyanite	1302-76-7	1.0
Quartz	14808-60-7	0.3 (maximum)

* These columns give typical analyses based on historical production performance. Continental Mineral does not make any express or implied warranty that future production will continue to possess these typical properties.

HAZARDS IDENTIFICATION

Potential Health Effects Zircon sand, as shipped, does not pose an inhalation health hazard because it contains essentially no particles in the respirable size range. However, if during handling or use the particles are broken down to a size that can be inhaled, the dusts may be harmful to the respiratory system. Zircon flour particles below 10 microns in size may also be harmful to the respiratory system. Zircon sands and flour contain trace quantities (90-120 pCi/g) of naturally occurring radioactive uranium and thorium (less than or equal to 475 ppm total uranium and thorium or 0.0475% w/w), and (109-116 pCi/g) radium. Overexposure by inhalation to respirable dusts containing radioactive uranium, thorium, and radium may cause lung cancer. Eye contact with the product may cause irritation with discomfort, tearing or blurring of vision.

The predominant effect of overexposure to airborne respirable quartz in humans is silicosis. Silicosis is a chronic fibrotic lung disease characterized by formation of silica-containing scar tissue in the lungs with symptoms of coughing, dyspnea, wheezing and nonspecific respiratory ailments. Gross acute overexposures to quartz by inhalation may cause fatality. Epidemiological studies show that in addition to silicosis, there is limited evidence of excess lung cancer in occupations involving exposures mainly to respirable quartz, such as stone cutters and granite industry workers.

Individuals with pre-existing conditions of the lungs may have increased susceptibility to the toxicity of excessive exposures.

Measurements made in DuPont during use of a similar mineral sand indicate that 1 mg/m3 of respirable dust is equivalent to about 0.1 pCi/m3 of thorium plus uranium. Therefore, observance of the 5 mg/m3 OSHA PEL for respirable dust will ensure that the Mineral Sands user is within limits established for exposure to respirable quartz, and to naturally occurring radioactive uranium, thorium, and radium.

HAZARDS IDENTIFICATION (Continued)

Zircon is exempt from NRC regulations for source material per 10 CFR 40, since it falls under the definition of material containing less than 0.05% uranium or thorium. However, calculations show that observance of 2.2 – 2.8 mg/m3 of respirable dust (particles less than 10 microns) will under voluntary guidelines ensure that intake is less than 10% of the Annual Limits on Intake (ALIs) specified in 10 CFR 20.1502(b) and NRC Standards for Protection Against Radiation for uranium, thorium, and radium and radioactive daughter decay products.

Carcinogenicity Information
The following components are listed by IARC, NTP, OSHA or ACGIH as carcinogens.

Material	IARC	NTP	OSHA	ACGIH
Quartz	1	X		

FIRST AID MEASURES

First Aid

Inhalation: If inhaled, immediately remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

Skin Contact: The compound is not hazardous by skin contact, but removal of particles and cleansing of the skin after use is advisable.

Ingestion: No specific intervention is indicated, as the compound is not hazardous by ingestion. However, if symptoms occur, consult a physician.

Eye Contact: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Call a physician.

FIRE FIGHTING MEASURES

Flammable Properties
Will not burn.

Extinguishing Media
As appropriate for combustibles in area.

Fire Fighting Instructions
None

ACCIDENTAL RELEASE MEASURES

Safeguards (Personnel)

NOTE:
Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

Accidental Release Measures
Sweep up spillage.

HANDLING AND STORAGE

Handling (Personnel)
Avoid breathing dust. Wash thoroughly after handling.

If handling respirable flour, use of gloves and washing before eating, drinking, applying cosmetics or smoking is advisable to minimize dust inhalation from hands.

EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls
Use sufficient ventilation to keep employee exposure below recommended limits.

When using Zircon Sand as an abrasive blast agent in confined areas, airborne dust levels should be controlled by physical enclosure of the abrasive blasting operation. The enclosure should be exhaust ventilated in accordance with 29 CFR 1910.94 Ventilation (a) Abrasive Blasting.

Personal Protective Equipment
Eye/Face Protection: Wear safety glasses with side shields.

Respirators: A NIOSH/OSHA approved air-purifying respirator with a high efficiency filter approved for radionuclides may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air-purifying respirators is limited. Use a positive pressure air-supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air-purifying respirators may not provide adequate protection.

OSHA required a continuous flow air-line supplied respirator with hood for protection in abrasive blasting operations. Refer to OSHA Standards 29 CFR 1910.94.

Protective Clothing: Wear impervious clothing, such as gloves, aprons, boots or whole bodysuit as appropriate.

Exposure Guidelines
Exposure Limits
Zircon Sand

PEL (OSHA)	Particulates (Not Otherwise Regulated) 15 mg/m3, 8 Hr. TWA, total dust 5 mg/m3, 8 Hr. TWA, respirable dust

EXPOSURE CONTROLS/PERSONAL PROTECTION (Continued)

Exposure Guidelines (Continued)

Other Applicable Exposure Limits

Zircon		
PEL	(OSHA)	5 mg/m3, 8 Hr. TWA, as Zr
TLV	(ACGIH)	5 mg/m3, 8 Hr. TWA, as Zr, A4 STEL, 10 mg/m3, as Zr, A4
AEL *	(DuPont	None Established

Quartz		
PEL	(OSHA)	Total dust, (30 mg/m3 / % SiO2 +2) Respirable dust, (10 mg/m3 / % SiO2 + 2) As 8 Hr. TWA's
TLV	(ACGIH)	0.1 mg/m3, respirable dust, 8 Hr. TWA Or see: Christobalite [14464-46-1], Silica, Fused [60676-86-0], Tridymite [15468-32-2], Tripoli [1317-95-9] 0.1 mg/m3, 8 Hr. TWA, A2
AEL *	(DuPont)	0.1 mg/m3, 8 Hr. TWA, respirable dust

Rutile		
PEL	(OSHA)	15 mg/m3, total dust, 8 Hr. TWA
TLV	(ACGIH)	10 mg/m3, total dust, 8 Hr. TWA, A4
AEL *	(DuPont)	10 mg/m3, total dust, 8 Hr. TWA 5 mg/m3, respirable dust, 8 Hr. TWA

*AEL is DuPont's Acceptable Exposure Limit. Where governmentally imposed occupational exposure limits which are lower than the AEL are in effect, such limits shall take precedence.

STABILITY AND REACTIVITY

Chemical Stability

Stable.

Incompatibility with Other Materials

None reasonably foreseeable.

Decomposition

Decomposition will not occur.

Polymerization

Polymerization will not occur.

TOXICOLOGICAL INFORMATION

Animal Data Zircon Sands and Zircon Flours contain low levels of quartz (up to 0.3%). Effects noted in animals exposed to respirable quartz by inhalation or intratrachael instillation included pulmonary fibrosis, inflammation, edema, and emphysema. Lung tumors occurred in rats exposed by inhalation for up to two years to levels of 12.4 of 51.6 mg/m3 of quartz. Also, lung tumors were seen in studies in which quartz was instilled in the trachea of rats. Quartz was positive in mammalian cell cultures for cell transformation and chromosomal effects and was negative in cell culture assays for gene mutation in bacteria and DNA damage in mammalian cells and in a whole animal assay for chromosomal effects.

DISPOSAL CONSIDERATION

Waste Disposal Treatment, storage, transportation and disposal must be in accordance with applicable Federal, State and local regulations. If approved, may be transferred to a land disposal site.

NOTE:
Many states have, or are developing, new regulations for disposal of waste containing Naturally Occurring Radioactive Materials (NORM) above background levels. Consult and comply with current regulations.

TRANSPORTATION INFORMATION

Shipping Information ZIRCON IS NOT REGULATED AS A HAZARDOUS MATERIAL BY DOT OR IMO.

Shipping Containers: Hopper Cars
Hopper Trucks
Bags
Semi-bulk Bags

REGULATORY INFORMATION

U.S. Federal Rgulations TSCA Inventory Status Reported/Included.

TITLE III HAZARD CLASSIFICATIONS SECTIONS 311, 312

Acute	:	No
Chronic	:	Yes
Fire	:	No
Reactivity	:	No
Pressure	:	No

LISTS:

SARA Extremely Hazardous Substance	-- No
CERCLA Hazardous Material	-- No
SARA Toxic Chemical	-- No

CANADIAN WHMIS CLASSIFICATIONS:
D-2A; D-2B

"Zircon is exempt from NRC regulations for source material per 10 CFR 40, since it falls under the definition of unprocessed material containing less than 0.05% uranium or thorium."

OTHER INFORMATION

NFPA, NPCA-HMIS

NPCA-HMIS RATING

Health	0
Flammability	0
Reactivity	0

Personal protection rating to be supplied by user depending on use conditions.

Additional Information For further information, see Zircon Data Sheet.

WARNING!
This product contains quartz and radionuclides, both known to the State of California to cause cancer.

The data in this Material Safety Data Sheet relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process.

AUTHORIZED BY: Continental Mineral Processing Corporation
P.O. Box 62005
Cincinnati, Ohio 45262
Tel. 513-771-7190
Fax. 513-771-9153

DATE OF LATEST REVISION:
February 1, 1999

Pfizer Inc.
235 East 42nd Street
New York, NY 10017

Product: LIMESTONE - ADAMS

MSDS No: MINERAL / MIN009
Revision: 01
Date: June, 1988

National Paint and Coatings Association

Hazardous Material Identification System

HEALTH HAZARD	1 - Slight
FLAMMABILITY HAZARD	0 - Minimal
REACTIVITY HAZARD	0 - Minimal
PERSONAL PROTECTION	E - Glasses, Gloves, Dust Resp

SECTION I. MATERIAL IDENTIFICATION

Traue/Material Name: LIMESTONE - ADAMS

Description: Limestone, Calcium Carbonate

Other Designations: Vicron 15-15, Vicron 25-11, Vicron 31-8, Vicron 41-8, Marblewhite 325, Marblewhite 200, Vicron 325, Nelco Limestone Chips, ATF-10, ATF-20, ATF-40, AFG-25, AFG-10, AFG 10-40, Calcite Crystal

CAS: 1317-65-3

Chemical Name: $CaCO_3$

Manufacturer: Pfizer Inc.
235 East 42nd Street
New York, NY 10017

Phone: (413) 743-0591 Mon-Fri 7:30 AM - 4:30 PM

(413) 743-0598 Weekends, Holidays and 4:30PM - 7:30 A

SECTION II. INGREDIENTS AND HAZARDS

Ingredient Name:	CAS Number:	Percent:	Exposure Limits:
Limestone	1317-65-3		ACGIH TLV: 10 mg/M³, Total Dust OSHA PEL: 5 mg/M³, Respirable

There are extremely small, but detectable amounts of substances regulated under California's Safe Drinking Water and Toxic Enforcement Act (Proposition 65).
Arsenic - less than 2 ppm
Cadmium - less than 2 ppm
Chromium (VI) - less than 0.1 ppm
Lead - less than 4 ppm
These levels are "typical" quantities and may change slightly with different lots. The term "less than" indicates that the substance was detected, but the amount was less than the quantifiable limit.

Limestone contains crystalline silica at levels above 0.1% but less than 1%. These levels are "typical" and may change slightly with different lots.

MSDS MIN009 continues on page 2

GEORGE [illegible]
413-743-0591 x202
[illegible]

Pfizer Inc.
235 East 42nd Street
New York, NY 10017

Product: LIMESTONE - ADAMS

MSDS No: MINERAL / MIN009
Revision: 01
Date: June, 1988

SECTION III. PHYSICAL DATA

Appearance & Odor: White powder, no odor

Water solubility (%): Insoluble **Specific gravity (H_2O=1):** 2.6-2.8

SECTION IV. FIRE AND EXPLOSION DATA

Flash Point (method): Non-flammable **Limits: LEL %:** **UEL %:**

Extinguishing Media: Non-flammable. As appropriate for surrounding combustibles.

Unusual fire or explosion hazards: None

Special fire-fighting procedures: None

SECTION V. REACTIVITY DATA

Material is stable Hazardous polymerization will not occur

Chemical incompatibilities: Reacts with acid to liberate carbon dioxide gas.

Conditions to avoid: None known

Hazardous decomposition Products: None

SECTION VI. HEALTH HAZARD INFORMATION

This product is not considered a carcinogen by IARC, NTP, OSHA or ACGIH.

Summary of risks: Calcium Carbonate is a "Nuisance Particulate". They "have a long history of little adverse effect on lungs and do not produce significant organic disease or toxic effect when exposures are kept under reasonable control" (ACGIH TLV definition). May cause eye and skin irritation from abrasion.

Primary entry route(s): Inhalation and ingestion.

Acute effects: Abrassiveness may cause eye and skin irritation.

Chronic effect(s): No known chronic health effects.

First aid:

Eye contact: Flush eyes with plenty of water for at least 15 minutes. If irritation persists, seek medical attention.

Skin contact: Wash from skin with mild soap and water.

Inhalation: Remove from the exposure area.

Ingestion: Ingestion should not cause any significant health problems. If a large amount is ingested and if conscious, give large quantities of water to induce vomiting. Get medical attention.

Limestone is not listed as a carcinogen by IARC, NTP, OSHA, or ACGIH. Crystalline silica which may be present in quantities less than 1% has been reviewed by IARC

 HEALTH HAZARD INFORMATION continues on page 3

Pfizer Inc.
235 East 42nd Street
New York, NY 10017

Product: LIMESTONE - ADAMS

MSDS No: MINERAL / MIN009
Revision: 01
Date: June, 1988

IARC found limited evidence for carcinogenicity of crystalline silica in humans and sufficient evidence in experimental animals.

SECTION VII. SPILL, LEAK AND DISPOSAL PROCEDURES

Spill / Leak procedures: Those involved in clean-up of spills should use respiratory protection for airborne dust. Vacuum or scoop up spilled material for recovery or disposal, avoiding dusting conditions and using good ventilation. Wetting the spill with a water spray may help to keep the airborne dust levels down.

Waste management / Disposal: Calcium Carbonate is not considered to be a RCRA hazardous waste and may be disposed in a site suitable for industrial wastes. Refer to any local, State or Federal regulations for specific disposal information.

In case of emergency, call CHEMTREC, 24 hour information service, 1-800-424-9300.

SECTION VIII. SPECIAL PROTECTION INFORMATION

Personal protective equipment:

Goggles: Safety glasses or dust-tight goggles.

Gloves: Leather or rubber gloves.

Respirator: If exposure limits are exceeded, a NIOSH approved dust respirator should be used.

Workplace considerations:

Ventilation: Provide adequate exhaust ventilation to meet TLV requirements. An exhaust filter system may be required to avoid environmental contamination.

Safety stations:
An eyewash station should be available to the area of use.

SECTION IX. SPECIAL PRECAUTIONS

Other precautions: Good industrial hygiene practice requires that employee exposure be maintained below the recommended TLV. This is preferably achieved through the provision of adequate ventilation where necessary. Where dust cannot be controlled in this way, personal respiratory protection should be employed.

DOT Class: Not regulated.

Prepared/revised by: M. G. Larson

June, 1988

MATERIAL SAFETY DATA SHEET

Effective Date: November 1, 1994 | Date Printed: April 8, 1998 | MSDS : LCL

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT CODE: Chlorinated Paraffin

PRODUCT NAME: Paroil 140 CAS #: 63449-39-8

PRODUCT USE: Lubricant, Lubricant Additive, Flame Retardant, Plastics Compounding

DOVER CHEMICAL CORPORATION, 3676 Davis Road, NW, P. O. Box 40, Dover, Ohio 44622
TEL: (330) 343-7711 FAX #: (330) 364-1579 EMERGENCY TEL: (330) 343-7711 CHEMTREC: 1-800-424-9300

2. COMPOSITION/INFORMATION ON INGREDIENTS

COMPONENT	CAS #	EXPOSURE LIMITS	% By Wt.
Chlorinated Paraffin	63449-39-8	Not established	100

This particular product has not been shown to have adverse effects in years of manufacture and use. Chlorinated paraffins are a class of compounds that are similarly manufactured but vary in molecular structure by carbon chain length and degree of chlorination.

EEC 67/548: Not applicable

3. HAZARD IDENTIFICATION

EMERGENCY OVERVIEW

Clear, light amber liquid with slight to non-distinctive odor (See Section 9). Avoid contact with eyes and repeated or prolonged inhalation or contact with skin (See Section 3 below). Avoid contact with strong oxidizers and reducers. Protect against decomposition products of hydrogen chloride and oxides of carbon (See Sections 5, 7 and 10).

HMIS RATING: HEALTH: 1 FLAMMABILITY: 1 REACTIVITY: 1 PPE: B

POTENTIAL HEALTH EFFECTS

EYE: May cause eye irritation.

SKIN: Repeated or prolonged contact may cause skin irritation.

INGESTION: No hazard in normal industrial use.

INHALATION: High gas or vapor or mist concentrations may be harmful if inhaled repeatedly or for prolonged periods of time.

CHRONIC EFFECTS: Not listed as human carcinogen by OSHA, IARC, or NTP.

SIGNS AND SYMPTOMS: Eye, skin or respiratory tract irritation

DOVER CHEMICAL CORPORATION

Paroil 140

4. FIRST AID MEASURES

EYES: Hold eyelid open; flush with large volume of water; continue for 15 minutes. If irritation develops, seek medical attention.

SKIN: Wash area with mild soap and water. If irritation develops, seek medical attention.

INGESTION: If swallowed, induce vomiting as directed by medical personnel. Never give anything by mouth to an unconscious person.

INHALATION: No specific treatment. This material is not likely to be hazardous by inhalation. If exposed to excessive levels of vapor or mist, remove to fresh air and seek medical attention.

NOTE TO PHYSICIANS: Treat as any exposure to any oil base material. (See Section 3 for observable SIGNS/SYMPTOMS).

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES: Flash Point: >450 ° F Method: C.O.C. Burn Rate: Unknown

FLAMMABLE LIMITS: Lower flammable limit: Not established
Upper flammable limit: Not established

FLAMMABILITY CLASSIFICATION: Not established

AUTOIGNITION TEMPERATURE: Not established

HAZARDOUS COMBUSTION PRODUCTS: Hydrogen chloride, oxides of carbon

EXTINGUISHING MEDIA: Water fog; foam; dry chemical

ADDITIONAL CONSIDERATIONS: None

FIRE FIGHTING INSTRUCTIONS: Protect against decomposition products, wear self contained breathing apparatus. If this material is involved in a fire, keep surrounding containers cool with water spray and contain all runoff.

NFPA 704M RATING: HEALTH: 1 FLAMMABILITY: 1 REACTIVITY: 1 SPECIAL: -

6. ACCIDENTAL RELEASE MEASURES

Wear protective equipment (see Section 8); stop leak at source; dike area; prevent material from entering waterway; prevent contact with strong oxidizers and reducers (see Section 7); pump material to reclaim container; use absorbent on remaining material; and, shovel into disposal container.

7. HANDLING AND STORAGE

HANDLING: Do not wear contaminated clothing. Wash prior to eating, drinking, smoking, or use of restroom and when leaving work. Heating of non-vented container may cause container to rupture. Do not dispose of material or empty container to the environment.

STORAGE: Do not store near heat or open flame.

INCOMPATIBLE MATERIALS: Strong oxidizers and reducers

VENTILATION: Local exhaust, unless heating to vapor or mist

SPECIAL PACKAGING MATERIALS: Not applicable

DOVER CHEMICAL CORPORATION

Paroil 140

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: Mechanical if heated to vapor and mist; facility should be equipped with safety shower and eye wash in area.

EYE \FACE PROTECTION: Face shield or chemical splash goggles

SKIN PROTECTION: Impervious gloves; chemical goggles; long sleeve shirt and trousers

RESPIRATORY PROTECTION: Not required under normal conditions of use, avoid vapor and mist without respiratory protection

EXPOSURE GUIDELINES: (See Section 2)

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Clear, light amber liquid

ODOR: Slight to non-distinctive

PHYSICAL STATE: Liquid

pH: Not applicable

VAPOR PRESSURE: Unknown

VAPOR DENSITY: Heavier than air

BOILING POINT: Not applicable, material decomposes

MELTING POINT: Not applicable

SOLUBILITY IN WATER: Nil

SPECIFIC GRAVITY: 1.15 @ 50°/25° C

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable under normal ambient and anticipated storage and handling conditions

CONDITIONS TO AVOID: Avoid heating to decomposition

INCOMPATIBILITY: Strong oxidizing and reducing agents

HAZARDOUS DECOMPOSITION PRODUCTS: Hydrogen chloride, oxides of carbon

HAZARDOUS POLYMERIZATION: Will not occur

11. TOXICOLOGICAL INFORMATION

EYE EFFECTS: Mild transient eye irritation

SKIN EFFECTS: Mild to moderate skin irritation

INGESTION EFFECTS: Male rat: 13 week oral; NOEL; 3750 mg/kg/day
Female rat: 13week oral; NOEL; 100 mg/kg/day
Rat: 14 day oral; NOEL; 3000 mg/kg/day

INHALATION EFFECTS: No data

SUBCHRONIC EFFECTS: No data

CHRONIC EFFECTS/CARCINOGENICITY: Product not tested by OSHA, IARC, or NTP

EPIDEMIOLOGY: No data

TERATOLOGY: Pregnant Dutch belted rabbits: NOEL; 5000 mg/kg/day
Pregnant Charles River COBS CD rats: 5000 mg/kg/day; no apparent embryotoxicity; minimal maternal effects

REPRODUCTIVE EFFECTS: Female rat: 13 week oral; 3750 mg/kg/day; Ovary target organ; accumulation in ovary not associated with any toxicological changes in that organ

NEUROTOXICITY: No data

MUTAGENICITY: Rat: 5000 mg/kg/day; Invivo cytogenetic evaluation by analysis of bone marrow did not produce any increase in frequency of chromosome or chromatid abnormalities. Not clastogenic

SYNERGISTIC PRODUCTS: No data

12. ECOLOGICAL INFORMATION

ECOTOXICITY: Rainbow trout: 60 day; mean concentration 4.0 mg/l; material not toxic; Bioconcentration factor of 3.6-9.0 times on total material figures
Mussels: 60 day; NOEL; .32 mg/l; Bioconcentration of 87.2-1000 based on parent compound analysis

ENVIRONMENTAL FATE : No data

PHYSICAL/CHEMICAL: (See Sections 9 and 10)

13. DISPOSAL CONSIDERATIONS

According to local, state and federal regulations: The presence of chlorinated paraffin in a waste does not , by itself, make the waste hazardous. (40 CFR 261, Appendix VIII)

Because product uses, mixtures, processes, or contamination may render this material hazardous, it is the responsibility of the user/owner of the product to determine at the time of disposal, whether the product meets RCRA criteria for a hazardous waste. Dispose of this material and the empty containers, liners and rinsate according to current local, state, and federal regulations.

DOVER CHEMICAL CORPORATION

Paroil 140

14. TRANSPORTATION INFORMATION (Not meant to be all inclusive)

DOT SHIPPING NAME: Chlorinated Paraffin
DOT HAZARD CLASS/DESCRIPTION: Not applicable
DOT LABEL: Not applicable
DOT PLACARD: Not applicable
DOT UN/NA NUMBER: Not applicable
DOT PRODUCT RQ: Not applicable

IMO CLASSIFICATION: Not applicable

EEC CLASSIFICATION: Not applicable
EEC LABEL: Not applicable
EEC R: Not applicable
EEC S: Not applicable

TRANSPORT CANADA PIN: Not applicable

15. REGULATORY INFORMATION (Not meant to be all inclusive - selected regulations represented)

U.S. FEDERAL REGULATIONS:

TSCA: Appears in TSCA Inventory

OSHA: None

CERCLA SARA HAZARD CATEGORY:

SECTION 311 AND 312: This product has been reviewed according to the EPA "Hazard Categories"promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories: None

SECTION 313: This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372: None

INTERNATIONAL REGULATIONS:

CANADIAN WHMIS: None

CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA): Appears in the Domestic Substances List

EINECS: Appears in European Existing Chemical Substance Inventory

STATE REGULATIONS: No specific listing in California or New Jersey. Additional information available upon request.

16. OTHER INFORMATION

MSDS Status: Revised , May 1, 1996 (See Section 1)

The information herein is given in good faith, but no warranty, express or implied, is made. Consult **DOVER CHEMICAL CORPORATION** for further information.

Halstab ®

A DIVISION OF HAMMOND GROUP, INC.
STABILIZERS

HMIS

I	2*
F	0
R	1
PP	Sec. VIII

* Also Chronic Effects (Sec. VII)

PRODUCT NAME
LECTRO 65

MATERIAL SAFETY DATA SHEET

DATE PREPARED:
MARCH 22, 1999

SECTION I - MANUFACTURER AND PRODUCT INFORMATION

MANUFACTURER
HALSTAB DIV., HAMMOND GROUP, INC.
3100 MICHIGAN STREET
HAMMOND, IN 46323

FOR INFORMATION (219) 844-3980
FOR EMERGENCY (219) 931-9360
Ask for Environmental Coordinator

PRODUCT
TRADE NAME: HALSTAB 665
LECTRO 65
CHEMICAL NAME: Complex Lead Salt

CHEMICAL FAMILY: Basic Lead Chemicals
CAS #: NA - Mixture
FORMULA: Proprietary Composition

SECTION II - HAZARDOUS INGREDIENTS

MATERIAL OR COMPONENT	NOT TO EXCEED %	TLV-TWA mg/m3 (8hrs)	OSHA PEL mg/m3 (8 hrs)	TLV-C	BLV	LEL
MONOBASIC LEAD SULFATE CAS# 15739-80-7	70	0.15 as Pb (ACGIH)	0.05 as Pb	NA	LEAD 50 mmg/100 g blood	NA
DIBASIC LEAD PHTHALATE CAS# 17976-43-1	40	0.15 as Pb (ACGIH)	0.05 as Pb	NA	NA 50 mmg/100 g blood	NA

SECTION III - PHYSICAL DATA

SPECIFIC GRAVITY H2O = 1	*5.6*
SOLUBILITY IN H2O g/l	*NIL*
APPEARANCE AND ODOR	*WHITE POWDER ODORLESS*
MELTING POINT	*NOT APPLICABLE*
BOILING POINT @ 760 MM Hg	*NOT APPLICABLE*
EVAPORATION RATE	*NOT APPLICABLE*
VAPOR PRESSURE MM Hg	*NOT APPLICABLE*
VAPOR DENSITY	*NOT APPLICABLE*
% VOLATILES BY VOLUME	*NOT APPLICABLE*

SECTION IV - REACTIVITY DATA

REACTIVITY	*NPCA HMIS RATING = 1*
STABILITY	*STABLE*
CONDITIONS TO AVOID	*TEMPERATURES IN EXCESS OF 385 * C.*
INCOMPATIBILITY (MATERIALS TO AVOID)	*NONE KNOWN*
HAZARDOUS POLYMERIZATION	*NOT APPLICABLE*
HAZARDOUS DECOMPOSITION PRODUCTS	*HIGH TEMPERATURES OR FIRE MAY PRODUCE LEAD OXIDE FUME, VAPOR OR DUST*

EMERGENCY AND FIRST AID PROCEDURES:

INHALATION - Remove from exposure. Get medical attention if experiencing effects of acute overexposure.
INGESTION - Induce vomiting in a conscious individual. Get immediate medical attention. Call a physician.
SKIN - Wash thoroughly with soap and water.
EYES - Flush with copious quantities of water. Get medical attention.

NOTES TO PHYSICIAN: Lead and its inorganic compounds are neurotoxins which may produce peripheral neuropathy. For an overview of the effects of lead exposure, consult Occupational Safety and Health Adm. App. A of Occupational Exposure to Lead (29CFR1910.1025). "A Guide for Physicians, Health Maintenance of Workers Exposed to Inorganic Lead" is available from Lead Industries Association, Inc., 292 Madison Ave., New York, NY 10017.

SECTION VIII - SPECIAL PROTECTION

SPECIFIC PERSONAL PROTECTION EQUIPMENT

RESPIRATORY: As specified by 29CFR1910.1025(f) of the Federal Occupational Safety and Health Administration Standard for Occupational Exposure to Lead - When Handling, use a dust/fume respirator with NIOSH/MSHA approval. Respirator must be worn if TLV is exceeded.
Refer to Table II as specified in 29CFR1910.1025(F)(2)(i) for various exposure levels.
Other local, state, and federal regulations may also apply.
PROTECTIVE GLOVES: Not required, but recommended. EYE PROTECTION: Not required, but recommended.
OTHER CLOTHING AND EQUIPMENT: Protective clothing is required if lead exposures exceed the PEL or TLV; otherwise full body clothing should be worn during product use and handling, be left at the work site and be properly laundered after use, with the wash water disposed of in accordance with local, state, and federal regulations. Hard hat, safety boots, and other safety equipment should be worn as appropriate for the industrial environment. Personal clothing, including shoes, should be protected from contamination.

VENTILATION REQUIREMENTS

Ventilation as described in the INDUSTRIAL VENTILATION MANUAL, by ACGIH shall be provided where exposures exceed PEL or TLV specified in and in accord with OSHA Standard 29CFR1910.94. Currently 0.050 mg/m3 maximum and 0.30 mg/m3 set as trigger and action levels. Other local and state regulations may apply.

SECTION IX - DEFINITIONS

TLV-TWA -	*Threshold Limit Value - Time Weighed Average*	**TLV-C -**	*Threshold Limit Value - Ceiling*
ACGIH -	*American Conference of Governmental Industrial Hygienists*	**BLV -**	*Biological Limit Value*
PEL -	*Permissible Exposure Limit*	**LEL -**	*Lethal Exposure Limit*

SECTION X - SPECIAL PRECAUTIONS

PRECAUTIONS: There are two major means of lead absorption; namely inhalation and ingestion. Most inhalation problems can be prevented with attention to ventilation and respirator use. Ingestion can be prevented with good hygiene practices.
Do not inhale or swallow dust. Wash thoroughly after handling. Use gloves and avoid spilling on hands, face, or body, to prevent secondary contamination by ingestion or inhalation. Do not smoke, eat, or apply cosmetics in work area. Wash thoroughly before entering into eating areas. Do not wear any part of work clothing home. This includes shoes.
Keep lead materials away from feed and food products. Keep away from children. Do not reuse containers. This product is intended for industrial use only.

SECTION X - OTHER HANDLING AND STORAGE REQUIREMENTS

Store in a dry area where accidental contact with acids or bases is not possible.
When a spill releases material into the environment, it may be necessary to file a report of discharge. Contact your local environmental authorities to determine what rules apply.
Avoid skin contact.
Before using this product, be familiar with information contained in:
The Occupational Exposure to Lead Standard (29CFR1910.1025)

SECTION XI - REGULATORY INFORMATION

As defined by TSCA, this product is a mixture and all of the components of this mixture are listed in the TSCA Inventory.
The component(s) of this product are also listed in the DSL.

SARA Supplier Notification
The product or component(s) of the product we sell to you are subject to the reporting requirements of Section 313, Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA), 40 CFR Part 372.

Product	*Chemical*	*CAS Number*	*% By Weight*
Lectro 65	*Lead Compounds*	*Not Applicable*	*100*

PREPARED BY: TECHNICAL SERVICE DEPARTMENT
HALSTAB DIVISION
HAMMOND GROUP, INC.
3100 MICHIGAN ST., HAMMOND, IN 46323

ANY PHOTOCOPY MUST BE OF THIS ENTIRE DOCUMENT

Halstab ®

A DIVISION OF HAMMOND GROUP, INC.
STABILIZERS

HMIS

	2*
F	0
R	1
PP	Sec. VIII

* Also Chronic Effects (Sec. VII)

PRODUCT NAME
HALSTAB 665

MATERIAL SAFETY DATA SHEET

DATE PREPARED:
MARCH 16, 1999

SECTION I - MANUFACTURER AND PRODUCT INFORMATION

MANUFACTURER
HALSTAB DIV., HAMMOND GROUP, INC.
3100 MICHIGAN STREET
HAMMOND, IN 46323

FOR INFORMATION (219) 844-3980
FOR EMERGENCY (219) 931-9360
Ask for Environmental Coordinator

PRODUCT
TRADE NAME: HALSTAB 665
CHEMICAL NAME: Basic Lead Stabilizer - Modified, Lubricated
CHEMICAL FAMILY: Basic Lead Chemicals
CAS #: NA - Mixture
FORMULA: Proprietary Composition

SECTION II - HAZARDOUS INGREDIENTS

MATERIAL OR COMPONENT	NOT TO EXCEED %	TLV-TWA mg/m3 (8hrs)	OSHA PEL mg/m3 (8 hrs)	TLV-C	BLV	LEL
MONOBASIC LEAD SULFATE CAS# 15739-80-7	70	0.15 as Pb (ACGIH)	0.05 as Pb	NA	LEAD 50 mmg/100 g blood	NA
DIBASIC LEAD PHTHALATE CAS# 17976-43-1	40	0.15 as Pb (ACGIH)	0.05 as Pb	NA	NA 50 mmg/100 g blood	NA

SECTION III - PHYSICAL DATA

SPECIFIC GRAVITY H2O = 1	*5.6*
SOLUBILITY IN H2O g/l	*NIL*
APPEARANCE AND ODOR	*WHITE POWDER ODORLESS*
MELTING POINT	*NOT APPLICABLE*
BOILING POINT @ 760 MM Hg	*NOT APPLICABLE*
EVAPORATION RATE	*NOT APPLICABLE*
VAPOR PRESSURE MM Hg	*NOT APPLICABLE*
VAPOR DENSITY	*NOT APPLICABLE*
% VOLATILES BY VOLUME	*NOT APPLICABLE*

SECTION IV - REACTIVITY DATA

REACTIVITY	*NPCA HMIS RATING = 1*
STABILITY	*STABLE*
CONDITIONS TO AVOID	*TEMPERATURES IN EXCESS OF 385 * C.*
INCOMPATIBILITY (MATERIALS TO AVOID)	*NONE KNOWN*
HAZARDOUS POLYMERIZATION	*NOT APPLICABLE*
HAZARDOUS DECOMPOSITION PRODUCTS	*HIGH TEMPERATURES OR FIRE MAY PRODUCE LEAD OXIDE FUME, VAPOR OR DUST*

SECTION V - FIRE AND EXPLOSION HAZARD DATA

FLAMMABILITY *NPCA RATING = 0*	**DOT CATEGORY** *NOT APPLICABLE*
FLASH POINT *NOT APPLICABLE*	**AUTO IGNITION TEMPERATURE** *NOT APPLICABLE*
EXTINGUISHING MEDIA *WATER FOG OR FLOOD, C02 AND DRY CHEMICAL*	**FLAMMABLE LIMITS** *NOT APPLICABLE*

SPECIAL FIRE FIGHTING PROCEDURES	*Wear full body protective clothing and full face piece, self-contained breathing apparatus operated in positive-pressure mode.*
UNUSUAL FIRE AND EXPLOSION HAZARDS	*Fume, vapor, and/or dust may occur and are considered toxic and respiratory irritants. The product or dust can react vigorously with strong oxidizing agents. Airborne dust may present an explosion hazard. Refer to FIRE PROTECTION GUIDE ON HAZARDOUS MATERIALS by N.F.P.A. for specific individual problem combinations.*

SECTION VI - SPILL OR LEAK PROCEDURES

CLEAN UP METHODS	*Clean the area of spill, returning all material possible to container. Wear gloves, goggles, respirator. Do not breathe or ingest dust. For a SMALL spill, use a vacuum. Do not broom sweep. Recovered material should be stored in dry containers for later disposition. Do not use compressed air for cleaning. Exclude all individuals not wearing protective equipment from the spill area until clean up is completed.*
WASTE DISPOSAL	*Disposal of waste and hazardous material should be handled in a manner which complies with local, state and federal Environmental Protection Agency regulations. It is preferable to send waste material to a recycling facility which is approved by the state and federal EPA. City, state and federal regulations must be followed at all times.*
NEUTRALIZING CHEMICALS	*Not Applicable*

SECTION VII - HEALTH HAZARD INFORMATION

HEALTH HAZARD *NPCA HMIS RATING = 2*

ROUTES OF EXPOSURE WHEN HANDLING OR PROCESSING

Mode of entry into body:

1. *By INHALATION of dust or fumes, the respiratory system may be irritated and both acute and chronic overexposure can result.*
2. *By INGESTION of lead compounds coming from dust trapped in the upper respiratory tract or introduced into the mouth on food, tobacco, finger or other objects, both acute and chronic overexposure can result.*
3. *SKIN CONTACT of dust may cause irritation; SKIN ABSORPTION does not apply, as dusts are not absorbed.*
4. *EYE CONTACT of dust or fume may cause irritation.*

EFFECTS OF OVEREXPOSURE

ACUTE OVEREXPOSURE *Lead intoxication will occur with accompanying symptoms of constipation, sleep disturbance, fatigue, headache, loss of appetite. Where inhalation is severe from heavy dusting or a large quantity is ingested and left untreated, colic, anemia, vomiting and neuritis will follow as evidenced by intense cramps, aching bones and muscles, uncoordinated body movements. Worst case situations could result in convulsions, stupor, coma, and encephalopathy.*

CHRONIC OVEREXPOSURE *Normal inhalation and/or ingestion of lead from the ambient air, foods and beverages is about 0.25 to 0.35 mg. per day. The normal adult metabolism can eliminate about one mg. of lead per day. When lead ingested and/or inhaled exceeds the body's ability to eliminate it, accumulation can reach the point where symptoms and disability occur. In this context, lead has cumulative toxic effect.*

Early effects of chronic overexposure to lead are difficult to detect, but symptoms include persistent fatigue, sleep disturbance, headache, aching bones and muscles, constipation, abdominal pains and loss of appetite. Prolonged ingestion and/or inhalation may be indicated by intense periodic cramps and constipation, nausea and vomiting. Excessive exposure may affect blood, nervous (brain), digestive (stomach), renal (kidneys), or reproductive systems. Synthesis of hemoglobin is inhibited and will result in anemia. Apathy and depression may be symptoms. If left untreated, neuromuscular dysfunction, possible paralysis and encephalopathy can result. Unusual occurance of symptoms should prompt immediate contact of a physician.

For industrial exposure, a worker's lead accumulation can be detected by an increase in blood lead above the base level established upon the employee's entry into the workplace. Blood lead above the biological limit value requires job removal.

THE STATE OF CALIFORNIA has determined that lead compounds cause birth defects. The product named on this MSDS is not listed in the National Toxicology Programs " Annual Report of Carcinogens"; the International Agency for Research on Cancer lists "lead, inorganic compounds, dust and fume" in group 2B, possibly carcinogenic in humans.

EMERGENCY AND FIRST AID PROCEDURES:

INHALATION - Remove from exposure. Get medical attention if experiencing effects of acute overexposure.
INGESTION - Induce vomiting in a conscious individual. Get immediate medical attention. Call a physician.
SKIN - Wash thoroughly with soap and water.
EYES - Flush with copious quantities of water. Get medical attention.

NOTES TO PHYSICIAN: Lead and its inorganic compounds are neurotoxins which may produce peripheral neuropathy. For an overview of the effects of lead exposure, consult Occupational Safety and Health Adm. App. A of Occupational Exposure to Lead (29CFR1910.1025). "A Guide for Physicians, Health Maintenance of Workers Exposed to Inorganic Lead" is available from Lead Industries Association, Inc., 292 Madison Ave., New York, NY 10017.

SECTION VIII - SPECIAL PROTECTION

SPECIFIC PERSONAL PROTECTION EQUIPMENT

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Refer to Table II as specified in 29CFR1910.1025(F)(2)(i) for various exposure levels.
Other local, state, and federal regulations may also apply.
PROTECTIVE GLOVES: Not required, but recommended. EYE PROTECTION: Not required, but recommended.
OTHER CLOTHING AND EQUIPMENT: Protective clothing is required if lead exposures exceed the PEL or TLV; otherwise full body clothing should be worn during product use and handling, be left at the work site and be properly laundered after use, with the wash water disposed of in accordance with local, state, and federal regulations. Hard hat, safety boots, and other safety equipment should be worn as appropriate for the industrial environment. Personal clothing, including shoes, should be protected from contamination.

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PEL -	*Permissible Exposure Limit*	**LEL -**	*Lethal Exposure Limit*

SECTION X - SPECIAL PRECAUTIONS

PRECAUTIONS: There are two major means of lead absorption; namely inhalation and ingestion. Most inhalation problems can be prevented with attention to ventilation and respirator use. Ingestion can be prevented with good hygiene practices.
Do not inhale or swallow dust. Wash thoroughly after handling. Use gloves and avoid spilling on hands, face, or body, to prevent secondary contamination by ingestion or inhalation. Do not smoke, eat, or apply cosmetics in work area. Wash thoroughly before entering into eating areas. Do not wear any part of work clothing home. This includes shoes.
Keep lead materials away from feed and food products. Keep away from children. Do not reuse containers. This product is intended for industrial use only.

SECTION XI - OTHER HANDLING AND STORAGE REQUIREMENTS

Store in a dry area where accidental contact with acids or bases is not possible.
When a spill releases material into the environment, it may be necessary to file a report of discharge. Contact your local environmental authorities to determine what rules apply.
Avoid skin contact.
Before using this product, be familiar with information contained in:
The Occupational Exposure to Lead Standard (29CFR1910.1025)

SECTION XII - REGULATORY INFORMATION

As defined by TSCA, this product is a mixture and all of the components of this mixture are listed in the TSCA Inventory.
The component(s) of this product are also listed in the DSL.

SARA Supplier Notification
The product or component(s) of the product we sell to you are subject to the reporting requirements of Section 313, Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA), 40 CFR Part 372.

Product	*Chemical*	*CAS Number*	*% By Weight*
Halstab 665	*Lead Compounds*	*Not Applicable*	*100*

PREPARED BY: TECHNICAL SERVICE DEPARTMENT
HALSTAB DIVISION
HAMMOND GROUP, INC.
3100 MICHIGAN ST., HAMMOND, IN 46323

VENDEE AND THIRD PERSONS ASSUME THE RISK OF INJURY PROXIMATELY CAUSED BY THE MATERIAL IF REASONABLE SAFETY PROCEDURES ARE NOT FOLLOWED AS PROVIDED FOR IN THE DATA SHEET, AND VENDOR SHALL NOT BE LIABLE FOR INJURY TO VENDEE OR THIRD PERSONS PROXIMATELY CAUSED BY ABNORMAL USE OF THE MATERIAL EVEN IF REASONABLE PROCEDURES ARE FOLLOWED.
ALL PERSONS USING THIS PRODUCT, ALL PERSONS WORKING IN AN AREA WHERE THIS PRODUCT IS USED, AND ALL PERSONS HANDLING THIS PRODUCT SHOULD BE FAMILIAR WITH THE CONTENTS OF THIS DATA SHEET. THIS INFORMATION SHOULD BE EFFECTIVELY COMMUNICATED TO EMPLOYEES AND OTHERS WHO MIGHT COME IN CONTACT WITH THE PRODUCT.
WHILE THE INFORMATION ACCUMULATED AND SET FORTH HEREIN IS BELIEVED TO BE ACCURATE AS OF THE DATE HEREOF, HAMMOND GROUP, INC. MAKES NO WARRANTY WITH RESPECT THERETO AND DISCLAIMS ALL LIABILITY FROM RELIANCE THEREON. RECIPIENTS ARE ADVISED TO CONFIRM IN ADVANCE OF NEED THAT THE INFORMATION IS CURRENT, APPLICABLE, AND SUITABLE FOR THEIR PARTICULAR CIRCUMSTANCES.

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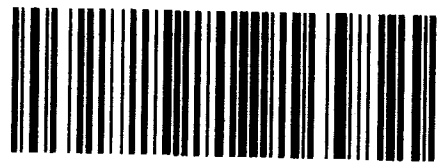

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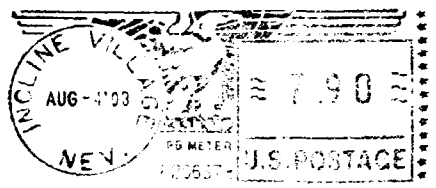

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